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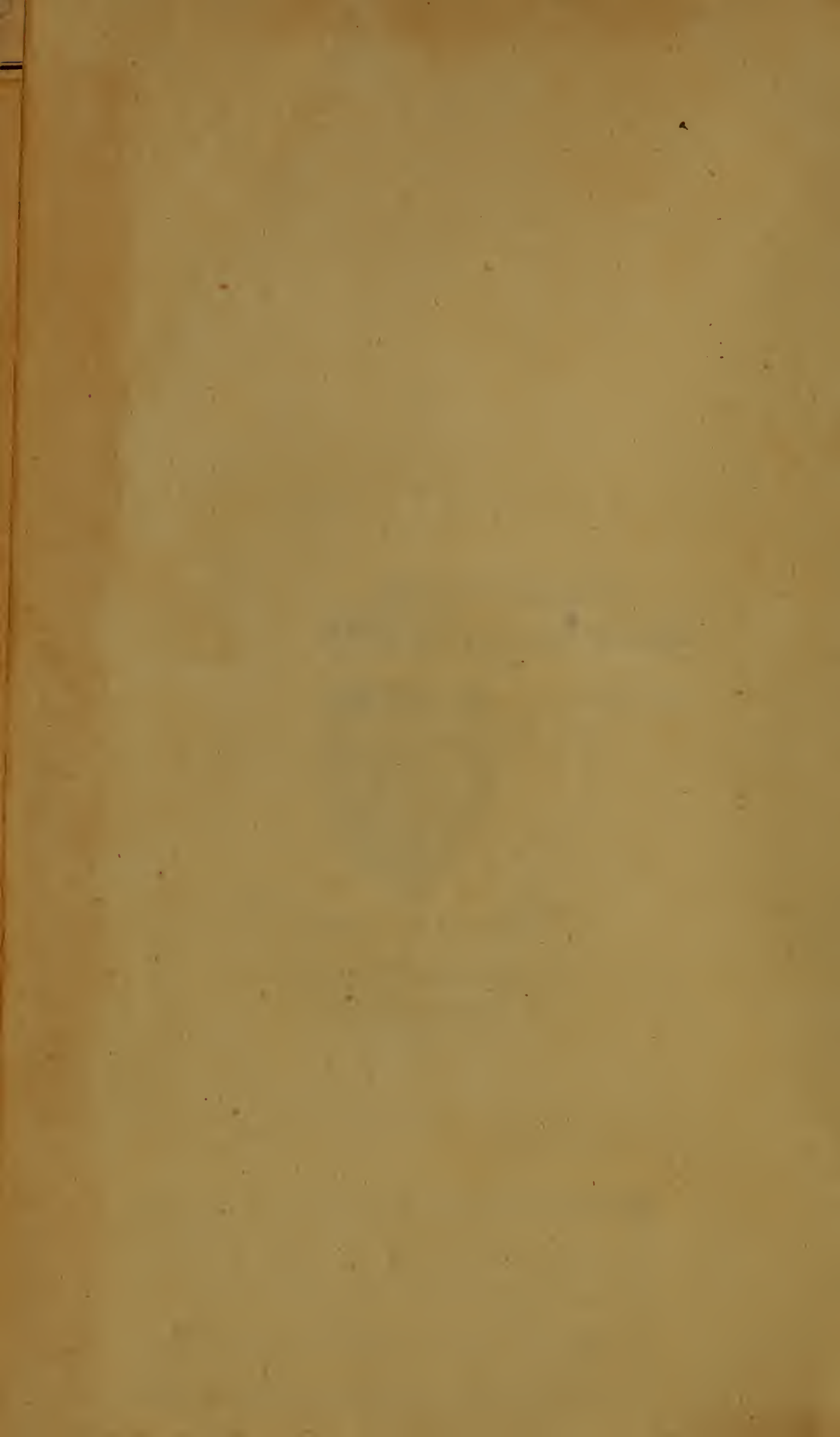
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Pathological Observations,

CHIEFLY FROM

DISSECTIONS

OF

MORBID BODIES.

Albrecht von
By Dr. ALBERT HALLER,
President of his Britannic Majesty's University at
Gottingen.



5⁺
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Physiological Observations



MORRIS BODIES

WILLIAM T. W. HARRIS
of the Boston Medical Library



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WILLIAM T. W. HARRIS
of the Boston Medical Library

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THE
P R E F A C E.

I Have been induced to publish this collection, from the known fate of academical pieces, either being very short lived, or becoming so scarce, that the observations contained in them are lost to all except some curious persons, whose happiness it is to be possessed of large libraries. These pieces are out of the sphere of the booksellers, and the candidates

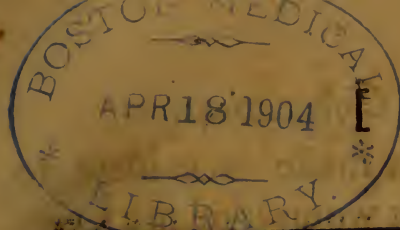
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dates for academical degrees commonly take care, to have no more copies printed than are just necessary to distribute among their acquaintances, possibly about two or three hundred, and of these the greater number falls into such hands, as neither understand them, nor have any taste for these subjects. Having performed this humble office to a great many authors of anatomical Theses, and being now engaged in doing the like to the writers of chirurgicaleffays, I hope I shall be excused for taking the same care of my own compositions, that if they contain any thing useful, it may be more generally communicated to the present age, and transmitted to posterity. This collection contains seventeen observations, published in 1749 and 1753, consisting almost wholly of dissections of morbid bodies; likewise similar cases, which were formerly

merly published in the Philosophical Transactions, and the *Commercium Noricum*, or The Bavarian Literary Correspondence; besides such of my anatomical observations as are of the same nature, and which I thought might be useful. Not that I have picked out the most extraordinary or surprising cases, observations on common diseases being perhaps of more real use, than on those which rarely occur. I have faithfully related what I myself saw, in as plain and concise a manner as possible, purposely avoiding a tedious narration of trifling incidents, which only fatigue and perplex the reader. To the observations I have annexed short corollaries, not with a view of enhancing the merit of these miscellanies, but as hints for intelligent persons who peruse them. It is certain, that the refuting of the theory of inflammation, which is drawn either from the
struc-

viii The P R E F A C E.

structure of the arteries, or from the globules insinuated into the smaller vessels, would have furnished me with a subject for a copious dissertation; but I chuse rather to be concise, provided I can make myself sufficiently understood. Lastly, in classing the observations, I have observed the same order with that of the viscera.



Pathological Observations,

Consisting chiefly of

D I S S E C T I O N S

O F

M O R B I D B O D I E S.

O B S E R V A T I O N I. ^a

A Scirrhus of the Cerebellum.

WILLIS places the seat of the vital principle in the Cerebellum, and BOERHAAVE has adopted and embellished the same hypothesis. But besides many objections against a distinct class of vital nerves, and the experiments made by LA PEYRONIE, the celebrated ZINN,

^a Taken from the Philosophical Transactions, N. 474. ZINN has likewise given an account of two scirrhus tumours in the brain. Comm. Goett. tom. II: ad fin.

and myself, all which make it evident to a demonstration, that wounds of the Cerebellum in dogs do not occasion immediate death, this hypothesis is farther invalidated by diseases of that viscus, not common indeed, but some of them very violent, so as to render it entirely useless, and yet the patients have lived a long while. Hence it may with some certainty be conjectured, that, contrary to the Willisian system, the vital nerves do not rise immediately from the Cerebellum, and from it only. And farther, it is well known, that very few of them rise from the nerves of the brain, or from branches of the eighth pair, and of the intercostal nerve; but their chief origin is from the spinal nerves, from which, both the cervical ganglions derive their source, much more than from the brain.

I have therefore thought not unworthy of notice, what I lately observed in a beggar girl, about six years of age, whose body was brought to the theatre to be dissected, on the 11th of January, 1744. She was extremely emaciated, and a great many of the glands of the mesentery,
groins,

groins, and bronchia were in a scirrhus condition.

In tracing the course of the external carotid artery, and of that branch which Winslow terms the internal maxillary, I was struck with an extraordinary appearance in the Cerebellum. Almost its whole left lobe adhered very firmly to that part of the Dura Mater which lines the Occiput, and upon cutting through that membrane, I found a very large scirrhous, of two inches diameter every way, into which either the whole medullary or cortical substance of the Cerebellum had degenerated. The tumour was throughout of an equal thick consistence, fibrous, and somewhat resembling the texture of the kidney, and easily cut; but upon dissecting it, there was no appearance of any distinct vessels, nor any vestige either of the cineritious Cortex, or of the medullary ramifications could be observed.

Whatever might be the cause of such an extraordinary disease, it is certain that the middle part of the Cerebellum in this girl must have been useless for a good while, yet she lived amidst all the distresses of poverty, and was able to beg about the streets.

The only history I know, parallel to this of a scirrhus Cerebellum, which was found in an idiot, is to be seen in the Memoirs of the royal academy of sciences, 1705, N.13. to which M. LE PLANCHE, in an essay of his own, has added one similar of an ulcer in the Cerebellum, which even in an acute disease, did not prove fatal for some time.

OBSERVATION II.

Large holes of the Falx.

* In dissecting the brain, we frequently observe large holes in the Falx, and these cannot but be attended with some inconveniency, the cortex of the brain on one side often coalescing with that of the other and the office of the Falx, in securing the lower hemisphere from being pressed upon by the upper when we lie upon one side, being thereby totally lost.

^b I have seen, in the Plexus Choroides, pretty large, scirrhus, white, vascular glands, some of the size of a filbert, which must certainly be prejudicial to the brain.

OBSERVATION III.

The Capsula of the Lens Crystallina rendered opaque.

I have seen a cataract in the eye of a cat, where the capsula of the chrySTALLINE lens was quite pellucid, and easily separable from the lens itself, which was white, and of a mucous consistence. The nucleus within was more firm, as is usual, but split into the figure of a star, with three rays: the Iris, which the celebrated GUNTZ has so very lately affirmed to be plane^c, was evidently convex, as were likewise the ciliary processes. And the same convexity I plainly perceived in a rabbit. I have since, in February, 1753, seen in a woman, a foramen in the cornea, and found the lens yellow, but pellucid, yet the whole Capsula was opaque and white. A like white opacity in the Capsula of the lens, I also saw in another old woman. These instances, are certain proofs, that the Capsula of the lens may be rendered opaque^d. Another very singular, and almost incre-

^c Disp. de Staphylomate.

^d Which GUNTZ in his treatise De Suffus. will not allow.

6 *Pathological Observations.*

dible disease of the eye, I shall give an account of, among the examples of indurated parts of the human body.

OBSERVATION IV.

*An Aneurism of the carotid artery.**

I shall here mention several diseases of the neck, which I have seen in different years. The first of these was an Aneurism of the carotid artery, in a gardener, which I saw in the year 1749. The man was subject to suffocations, a quick pulse, and unable to work; yet in such a state of health, that the surgeon, misled by a kind of undulation in the swelling, was preparing for laying it open, and could hardly be hindered from doing it by myself and some others, who suspected what it was, from a pulsation which we felt in it, though indeed it was very weak. The tumour was perfectly white, of the same colour with the skin, and had spread itself by degrees between the ear and lower jaw, all the way to the clavicle. It was somewhat hard, had but very little elasti-

* Progr. ad disp. clar. vicer. P. CASTRELLI & REMI, 1753.

city, neither did it appear as if there was pus contained in it, nor did it seem to be bony, or an indurated substance. Though what was contained in it yielded to the pressure of the finger, yet it did not restore itself again, as fluids usually do. Death delivered the patient from the dangerous operation, and the surgeon from that concern which every humane man must feel, when his endeavours to relieve prove rather hurtful than salutary. There being no time to lose, we dissected the affected parts that evening. The skin being removed, the tumour itself came immediately in view, and was membranous, cellular, spongy, adhering to the skin, and more than twice as large as one's fist. After cleaning it very carefully, which was a work of no little time, we discovered it to be a tumour of the carotid artery, which reached from the subclavian to the division of the two branches of the carotid. The coats of the artery were hardened, and considerably increased both in thickness and capacity; which must make the thickness observed by some in the pregnant uterus appear less surprising. Upon opening the aneurismal sack, there was found

in it a great deal of grumous blood, the external part of which, contiguous to the coats of the artery, had degenerated into a cellular spongy substance, which contained only a small quantity of fluid blood.

OBSERVATION V.

A Scirrhus of the mastoid muscle †.

The people of Holland are very subject to a complaint, in which the neck is bended considerably to one side; and the usual method of cure is by cutting the mastoid muscle. Some eminent practitioners have proposed, in this case, to cut the mastoid muscle of that side towards which the head is inclined, hoping that thereby the head might be restored to its proper position; and consequently the patient relieved from an awkward distortion, which incapacitates him for several offices of life. But Winslow, on the contrary, in an essay of his published at Paris, objects against the use of any remedy to that side of the neck towards which the head reclines, being persuaded, that the mastoid muscle of

† Progr. ad disp. clar viror. P. CASTRELLI & REMI.

‡ Memoir. de L' Acad. de Sciences, p. 299.

that

that side is sound, but that the one of the other side is paralytic.

I do not deny this to be the case when the complaint is owing entirely to a palsy; but upon dissecting a body where the neck was bent in this manner, I have discovered a different cause: for almost in the middle of the mastoid muscle, I found a scirrhous tumour, uniform throughout, white, oval, vascular, and in a word formed of extravasated matter inspissated in the cellular membrane of the muscle. Both above and below the tumour, the muscle had quite a natural appearance.

Now it is evident, that such a tumour must render the muscle of that side shorter, and incline the neck towards the scapula, of the same side; and therefore remedies applied to the other side, as Winslow advised, could be of no service in such a case. Neither could the operation practised by the Dutch surgeons give any relief here, seeing there is no reason to expect that cutting through the muscle should ever discuss the tumour. Experience must teach us, whether friction, mercury, embrocations, or fomentations of the
emollient

emollient kind, will prove more efficacious. I shall content myself at present, with being the first, as far as I can remember, who has given the hint of this cause of a wry neck.

OBSERVATION VI.

Strumæ^b.

That species of Scirrhus may be termed muscular. There is another, more commonly known by the name of Struma, which is glandular, usually affects the neck, and is common to aged persons, even in this country, so distant from the Alps; and indeed I have not observed it to be so frequent amongst the inhabitants of those mountains, as in some towns in the champaign parts of Swisserland, particularly Cappelen near Arberg, and likewise in the warm and fruitful valley, called the Pais de Vaud. The thyroid gland is generally known to be greatly affected in these Strumæ. I have sometimes found it only enlarged, soft, and as it were inflated, which D. l'Alouette judiciouslyⁱ imputes to

^a Prog. ad Disp. P. CASTRELLI 1753.

^b Memoires Presentes, p. 269.

the air being pushed by the efforts during the time of labour thro' the minute ducts going from the *Aspera arteria*; and this our women look upon to be certainly the case. These I imagine to be the *Strumæ* which are sometimes cured by burnt sponge, and such like remedies. But in a woman who had been drowned, I found the thyroid gland degenerated into a large *Struma*, soft, and fleshy; in the middle of which there was a lump of white callous fat, together with something of a stony consistence.

In another woman one half of the thyroid gland was found, and in its natural state, but the other was no less than five inches in length, and its whole substance diseased. Its outward coat was thick and soft, and not much affected: the flesh immediately below had a glandular, and natural appearance; but within this, there was another substance, very much resembling lard. In the upper part there was something bony, like a conglomeration of bony fragments.

A *Struma* in another female subject contained a cyst of the bigness of a hen's egg, inclosed in a proper covering, and filled with
a car-

a cartilaginous scirrhus, a chalky kind of sand, and a yellow matter: near it were two other cysts, resembling the former, but of a more globular figure.

In another Struma of the thyroid gland were found several hydatids, in some of which the outward membrane was considerably hardened, and contained some small grains of sand,

A girl of six years of age had the lungs ulcerated, the glands of the neck and the thymus much swelled, and a cyst about as big as a pigeon's egg, consisting of very strong coats, quite full of pus, close shut up on all sides, adhering to the æsophagus. This is probably the disease which being more frequent in dogs, gave rise to Vercellonius's strange hypothesis, viz. of an animated ferment in the stomach. He had observed that in dogs worms nestled themselves in ulcers formed in those glands which are contiguous to the æsophagus, and from whence some lymphatic vessels are sent to the thoracic duct.

Though Strumæ for the most part do not shorten life, yet they are not entirely void of danger. I once saw, by a compression of the jugular veins, such a lethargy

thargy gradually produced in a man of learning, as terminated at last in a fatal apoplexy. And lately, I saw, in an old woman, the Aspera arteria compressed to such a degree, that she could scarcely breathe, and that compression very probably helped to kill her. But whether, among such a multitude of vessels, which increase in size as the gland itself enlarges, that are so near the internal jugular vein and carotid artery, and among so many anastomoses of the superior and inferior thyroid arteries; I say, whether extirpation would be advisable in these cases, is to me very doubtful.

OBSERVATION VII.

Suffocation occasioned by a filberd.*

I dissected in the theatre a boy, who had been suddenly choaked by a filberd which had stuck below the Glottis, under the inferior ligaments, below the thyroid cartilage, immediately above the orifice of the Aspera arteria. This misfortune, might probably, have been prevented by bronchotomy, if when the accident happened,

* Progr. ad disp. P. CASTRELLI & REMI.

the Aspera arteria had been immediately opened, and so the fatal nut taken out with a spoon. But in so sudden a case, it is often very doubtful where the suffocating body is lodged.

OBSERVATION VIII.

A singular cause of hoarseness¹.

I have formerly traced the cause of a low voice, and at last entire loss of speech, in a woman, who had in the Uterus, which was stuffed with thick blood, three large scirrhus and round tubercles, seated between the membranes. In the same person one half of the Epiglottis, probably from a like cause, was covered with an ulcerous tumour, here and there eroded, which I imagined to be the cause of the defect in her voice. But to me it appears surprising that she was not suffocated.

OBSERVATION IX.

Suffocation occasioned by a worm.²

What I saw in a girl of ten years of age, must be allowed to be a very singular

¹ Progr. ad disp. P. CASTRELLI & REMI.

² Progr. ad disp. P. CASTRELLI & REMI;

cause of death. All the viscera were perfectly sound, and her only complaint was worms, of which her mouth and throat were quite full; but the suffocation was undoubtedly owing to two worms of the round kind, which were found in the Aspera Arteria, near the seat of the heart, and at the beginning of the lungs.

OBSERVATION X.

Account of a gibbosity.^a

In the month of January 1745, a male child about eighteen or twenty months old, was brought to the theatre. While I was dissecting the vessels of the thorax, I observed an unusual prominence in the middle of the breast, upon which I immediately resolved to examine as accurately as I could into the cause of that deformity, imagining that such an enquiry might probably be of use.

After I had removed the integuments and muscles, the sternum together with the cartilages of the ribs appeared remarkably prominent, while the bony part of the ribs was rather bended inwards. I

^a Progr. ad disp. Clar. Dart. Langhanus.

soon discovered a defect in the nine first ribs: the bony part contiguous to the cartilage was softened, so as to be almost cartilaginous, only the direction of the fibres still remained. Yet it was not a real cartilage, for the ribs of the skeleton, which is still in my possession, recovered their natural brittleness and hardness, as soon as they were dried. But the bone was only become so soft, as to be easily bended and compressed. The rest of the bony part of the ribs was not at all affected, nor the cartilages, excepting that they were distorted.

The deformity was exactly alike on both sides, but the ribs differed from one another in that respect as follows, viz. the bony part of the first rib was bended in such a manner, as to form a very acute curve, the beginning and end of which terminated in parallel straight lines; the extremity was bended backwards, so that its outward surface reflected towards the vertebra; and the inward towards the extremity was turned quite forwards. In the cartilage, which in such young subjects is very long, I observed no great alteration.

In the second rib, the bony part towards the middle projected considerably forwards, whereas

whereas that part which is nearer to the Sternum was bended backwards ; but at the end where it is connected with the cartilage, it was again reflected forwards. The cartilage of this rib, which goes down to the Sternum, had nothing amiss in its appearance. Thus, in the first and second rib, was formed a remarkable obtuse angle between the bony part near the cartilage and the cartilage itself ; whereas, in a sound thorax, the direction of the bony part of the rib is the same with that of the cartilaginous part.

The third rib was less distorted, yet it was somewhat depressed, so as to become almost strait towards the extremity of the bony part, from whence the cartilage descended towards the Sternum.

In the fourth rib, the depression of the bony part was less, and more gradual, but the cartilage projected considerably, so as to form a kind of angle between the bone and it. The external part of this cartilage descended, whilst the internal gently ascended to the Sternum ; so that taking it all together it seemed to be transverse.

The fifth rib, where it is joined to the cartilage, was flattened almost in the same manner as the fourth, but the cartilage it-

self was bended considerably forwards, in the form of a bow, and its extremity ascended to the Sternum.

To be short, the same figure obtained in the sixth, seventh, and eighth ribs; though the depression of the bony part in these was less, yet it was still observable, and hence a prominence was formed between the bones and cartilages.

By this means the Sternum and the cartilages annexed to it protuberated above the ribs, and formed a kind of arch over them, or more properly the segment of an acute arch, added to a more obtuse one. In the Sternum there were four ossifications, the largest, which was oval in the upper portion, and the other three in the lower, towards its upper extremity.

I could not perceive any cause of this deformity to be lodged in the viscera; for the liver, the vessels of which I dissected, was not swelled, and the heart and lungs were perfectly sound. It was from this very child, that the figure of the mesenterick arteries, in my third plate, was taken.

OBSERVATION XI.

The Back-bone, ° preternaturally crooked.

Though the crookedness of the Spine, which I am going to describe, is different from a gibbosity, yet still it has some kind of affinity with it. In a labouring woman, who used to carry heavy baskets of sand upon her back to town, from the river Seine, there was no apparent deformity; the winding flexures of the Spine corresponding so with each other as to hide it, till, in dissecting her, when I came to examine the abdominal viscera, I found the aorta displaced very much to the left side, and upon laying the bones of the thorax quite bare, I observed the following remarkable particulars.

The two upper Vertebræ of the thorax retained their natural position. The third inclined to one side in such a manner, that its middle was turned towards the left, but the whole taken together pointed towards the left in its upper part, and in its lower towards the right. In the fourth and fifth these circumstances were more re-

° Progr. ad disp. clar. LANGHANS, 1749.

markable ; but in the sixth the distortion was much more evident, so that the body of it was wholly turned to the right side, and nothing appeared on the fore-part, but the lateral portion, which is nearest to the articulation with the ribs. The seventh was distorted in the like manner, except that the lower extremity of it inclined it again to the left. Below this the whole back-bone was turned towards the left, and at the same time the right side of the bodies of the vertebræ projected more forwards.

Lastly, in the fore-part of the eleventh and twelfth vertebræ of the back a preternatural tuberosity appeared, formed by an ankylosis of the two contiguous vertebræ, copiously pouring out from the sides of their bodies an ossifying fluid, which concreting into a very hard and smooth tubercle, united them together in that part, the last and remaining part of the intervertebral ligament still retaining its cartilaginous tenacity. On the left side of the bodies of the first and second vertebra of the loins, was a remarkable cavity.

OBSERVATION XII.

An incysted Dropsy of the Pleura.

In a body which was reckoned dropfical, and a great quantity of water inclosed in the Pericardium, upon opening the Thorax, to the no small astonishment of the persons present, there were no lungs to be found, but only a bag full of a green watery liquor, which upon farther search was observed to have been extravasated between the intercostal muscles and the Pleura; and that this membrane, the use of which is to line the inside of the ribs, was separated from them in such a manner, as to form a bag as large as the whole cavity of the breast. Hence the left lobe of the lungs was so much compressed, as to be rendered thinner than one's hand, and the cavity in which it was lodged no larger than a glove. The other lobe was ulcerated. This is a very rare case, and shews, that an incysted dropsy may be produced in the Thorax, from water collected in the cells of the Pleura, in the same manner as it happens in the Abdomen.

OBSERVATION XIII.

A Pleurisy seated in the Lungs. ^p

The following observations are taken from my diary on the common diseases of the lungs, hoping that they will throw some light on the ætiological controversies relating to the pleurisy and peripneumony, the former of which generally passes for an inflammation of the Pleura, or of the intercostal muscles, as the latter is defined an inflammation of the lungs: But, if I am not mistaken, these observations will make it appear, that they arise from other causes.

In January 1733^q, a noble family, consisting of a mother and three daughters who were grown up, together with one of the maid servants, died all of the same disease. After the death of the mother, one of the young ladies, and the maid, I was sent for, and found the other two sisters ill of a pleurisy, with which one had been seized four days before, and the other three. The pulse in both was strong, hard,

^p Progr. ad disp. clar. CHEMNITIE. Gettin. 1749.

^q Comm. lit. Noric. 1735.

and truly pleuretic, the discharge by spitting bilious, and a violent oppression in the Thorax. After a miliary eruption, and a plentiful excretion of a well concocted pus, one of them soon recovered. The other, for want of bleeding in the beginning of the disease, died with an eruption of the same kind..

On the eighth day after her death I opened the body, and at the bottom of the right lobe of the lungs, found a large abscess, full of a white, yellow, and well concocted pus, of the same kind with that of which the sister who had recovered had spit up a great quantity; a plain proof that the lungs of both had been affected with a like abscess. The Pleura was perfectly sound; the seat of the abscess being in that part of the lungs which is contiguous to the diaphragm. I could confirm this observation by innumerable instances of the same kind. Thus in lib. II. sect. 3. of BONETUS's *Sepulchretum Anatomicum*, observ. IV.XX. and others are to this purpose. Besides, the spitting in pleuretic patients owing to the inflammation, is easily understood, if the seat of the disease is granted to be in the lungs; seeing by the inflammation part of the obstruct-

ing matter will make its way through the relaxed, exhaling, or mucous vessels into the bronchia. But how that matter can pass from the Pleura to the Aspera arteria, while the lungs remain sound, I leave to those who are of that opinion to explain. For I must beg leave to say, that it is a very rare case, and what I myself never saw, for an inflammation of the Pleura alone to prove mortal, or to produce that pus which is collected in the Empyema. And though I would be very far from rejecting observations contrary to these, yet from the rareness of the case just now mentioned, viz. of an inflammation of the Pleura proving mortal, I would advise physicians in treating the pleurisy, to suspect the cause of that disease to be rather an inflammation of the Lungs than of the Pleura, and so have immediate recourse to the most powerful remedies.

OBSERVATION XIV.

HISTORY I.

A Peripneumony from a transudation of Blood.

The following history of a Peripneumony gives me a very sensible grief, as the
subject

subject of it was a person for whom I had, very justly, the strongest affection. He was seized with a Peripneumony, which though gentle at its first appearance, grew gradually worse, so as to be attended with suffocating paroxysms, which put an end to his life, after bleeding and the fumes of warm vinegar had been used to no purpose. His pulse during his illness was soft, low, and quick. Upon opening the body, the Viscera were observed to be perfectly sound. It will readily be imagined, that the cause of the disease was to be looked for in the lungs; and accordingly upon examining them, though there was neither inflammation nor ulcer to be observed, yet there was such an universal effusion of blood, that a great part of the Viscus was become quite black; and though the lungs naturally swim when put into water, these, on the contrary, sunk. This therefore shews, that the stagnating blood being prevented from returning to the left ventricle of the heart, had in the Peripneumony gradually pushed its way forcibly through the exhaling vessels into the cells, and by this means compressed the vessels of the lungs, and this increased the resistance,
which

which the blood naturally meets with in those vessels, till at last the whole lungs were so much obstructed, as to prevent a quantity of blood sufficient to support life to pass to the left ventricle.

Wherefore it is not in the vessels only that the blood of persons, in a Peripneumony, is congested, as physicians have often advanced, (Ger Van Swiften comm. in Aphons, n. 826.) but there is a true Error Loci; so that the blood exhales into the vesicles of the lungs, instead of that subtil vapour with which they are naturally moistened.

HISTORY II.

Since that I have met with a still more melancholy instance of the same disease, in a strong manly boy of seven years of age, who was slightly indisposed for about eight days with frequent bleedings at the nose. His face was swelled and pale, and towards night he used to complain of a chillness without any fever. In other respects he was healthy enough. At length, on a Sunday after supper, he was seized with a difficulty of breathing, and next morning he was not able to remain any time

time out of bed. He felt an uncommon heat, and the same difficulty of breathing as before. I advised bleeding immediately; but another physician, who was called in, apprehending it to be an intermitting autumnal fever, or that the disease might be owing to worms, gave his opinion for deferring it. A clyster was given him, and he vomited twice spontaneously. But on Tuesday the case discovered itself too plainly, and what he spit was round, thick, and peripneumonic, with a mixture of blood. Upon opening a vein, the blood appeared fizy and pleuretic; he became light-headed, and would hardly take any medicines. After the bleeding was twice repeated, without giving any relief, he had oxymel of squills given him; but the anxiety increased upon him, he grew gradually cold, weak, and unable to expectorate, and died at the end of two days after the disease had declared itself. — Farewel, my dear child, and expect thy father to follow thee! — In order to be convinced of the cause of this cruel disease, I had the body opened by persons well versed in dissections, who told me that the left lobe of the lungs was full of thick blood, and sunk when put in water;

ter; that the left ventricle of the heart was empty, and the right, together with its auricle, distended with blood; that a polypus adhered to the mouth of the Aorta; and that there were evident signs of an inflammation of the Pleura. Here also appeared that cruel effusion of blood all over the cellular substance of the lungs, as appeared in the preceding case; and hence we see that in children, true mortal Peripneumonies are also produced.

HISTORY III.

A man upwards of fifty years of age was with difficulty recovered from a pleurisy, after frequent bleedings and other means; but continuing very subject to diseases of the breast, he used to remove the pleuritic symptoms at their first appearance by losing a little blood. But having occupied himself too much in gardening, towards the latter end of autumn, in a very damp soil, he fell into an acute fever, with a pain and oppression of his breast. His physician prescribed two vomits; but the disease still continued, with an incessant hiccough, and an intermitting pulse, which lasted till the evening,

evening, when this last symptom was removed by an intense fever. When the intermission was greatest, every third pulse stopped, and when least, every thirtieth. Hitherto the patient was able to sit up out of bed erect, but on the eighth day a kind of Delirium shewed itself. On the ninth he was again vomited, and if I am not mistaken blooded twelve times, and towards night musk was administered. The hiccough still continued, and on the eleventh day the disease in all respects grew worse. On that day he took Rhubarb. The fever however increased, and with it the Delirium, accompanied with sweats, involuntary stools, and an extreme difficulty of swallowing, and on the evening of the twelfth day he expired. I visited this patient only as a friend, without prescribing for him, and being desirous to find out the cause of such an obstinate hiccough, I opened the body. The liver, the bladder, and spleen were very sound, only the last was very small, and the intestines and stomach were white and void of blood. The right lobe of the lungs adhered here and there to the Pleura, and contained a whitish fluid, not unlike serum,

ferum ; otherwise it was found. The upper part of the left lobe was hardened into something like a purulent, yet not a real scirrhus, but a white compact substance, formed of the humour concreted by the former attack of the disease ; whereby it was rendered so firm and solid as to resist the touch, and sink in water. The diaphragm was not in the least affected, and therefore in this case was not the seat of the hiccough. Wherefore I opened the stomach, which during the disease did not seem to suffer, and found it all over inflamed, so that the blood was extravasated along the larger branches of the arteries, into its external cellular membranes ; and near its conjunction with the œsophagus, a quantity of the same blood made it appear almost black. Here the seat of the hiccough was in the stomach.

OBSERVATION XV.

A Phthisis Pulmonalis in an infant.

The antient physicians have assigned certain stages of life to consumptions. I

^r Progr. ad disp. clar. CHEMNIT. 1749.

I shall not take it upon me to call their judgment in question upon the subject. But I must beg leave to say, with due submission to their judgment, that this is a disease which attacks life very early, and sometimes even infancy itself, as I have been convinced by more than one instance; and no longer ago than January last, in a male infant, less than a year old, which I dissected, the right lobe of the lungs was quite full of a white, thick, and well concocted pus. Likewise, in the year 1736, I opened a nobleman's son, who was very young, troubled with worms, and had lingered a long time, in whom I found the lungs full of very small purulent abscesses, intermixed with large vesicles, which contained nothing but air. Which, by the by, is a proof that pus is generated not from fat alone, as some authors will have it, who have pushed the great BOERHAAVE's hypothesis on this subject a little too far. For the lungs and brain (which last is frequently suppurated) and the liver (in which not only I, but other anatomists have found very large abscesses) are void of all fat. Besides, in young children, I have very frequently seen an adhesion of the lungs.

Thus,

Thus, in 1741, I observed in a boy of three years of age, the lungs every where adhere to the Pericardium and Pleura by intervening membranes, and a like adhesion of the Spleen to the Peritoneum, by membranes of the same kind. In a boy two years old, whom I dissected in 1743, and who had died of a phthysical disease, the lungs were full of cartilaginous scirrhuses, and adhered every where to the Pleura. Farther, in a boy of six years of age, whose Omentum and Pancreas were scirrhus, and the membrane of the Spleen of an unusual thickness resembling the Omentum, the Peritoneum was full of small tubercles, such as Malpighius has mistaken for glands; the right lobe of the lungs set thick with hard steatomatous tumours, and its membrane exceeded a line in thickness. Little tumours of the same kind were observable in the Thymus, and also in the liver. Lastly, in a female infant, not above a year old, whose body I opened in January 1749, I found an imposthume in the lungs, and the right lobe was full of a white, well concocted pus.

But I knew a much more terrible species of Phthisis in a man, who had one of the lobes

lobes of the lungs not indeed purulent, but full of putrid matter, as black as ink, of which, I likewise found some quantity in the cavity of the Thorax.

OBSERVATION XVI.

*An adhesion of the lungs without any bad consequences**

As some who differ from me in opinion have denied, that life can subsist while there is a total adhesion of the lungs, on account of the want of air which they suppose necessary to be lodged between the lungs and the Pleura; I shall here add an instance, among many others which I could produce, shewing that the lungs may adhere without detriment to the health: In 1746, I saw in a poor woman, the lungs every where so firmly adhering to the ribs, that it was impossible to conceive them capable of motion. Each lobe touched the Sternum before the Pericardium; for as they adhered to the Mediastinum, this membrane by being compressed between the lungs, was rendered very thin and compact, running back from the Sternum to

* Progr. ad disp. CHEMNIT.

the Pericardium. But this case is so frequent, that I shall not be at the pains to produce any more examples of it.

OBSERVATION XVII.

The large vessels of the Thorax opened. †

A most terrible disorder of the lungs I saw at Leyden, in the year 1726, in a man, who dying of a lingering disease, occasioned by a fall, the left lobe of his lungs was not to be found; but instead of it a large quantity of a viscid foetid water, which coagulated with heat like the white of an egg: the Aspera arteria which if I had not myself seen, I could scarce have believed, and the larger arteries and veins opened with wide orifices into the cavity of the Thorax, as if they had been cut through; so that it was very hard to discover what it was that prevented the efflux of the blood. The right lobe of the lungs was putrid, corroded, in a consumptive state, and full of ulcers. The Pericardium adhered very firmly to the Sternum, and all these mischiefs were occasioned by a fall.

† Progr. ap disp. CHEMNITH.

From this it appears, what violent complaints the body is able to suffer, and life still remain for some considerable time.

OBSERVATION XVIII.

An Aneurysm of the Aorta.^u

Though instances of the Aneurysms of the Aorta near the heart are become less extraordinary now than they were formerly^v, yet I am persuaded, that an account of two which I lately met with in my dissections, will not be unacceptable to physicians of learning, especially as one of them afforded a subject for a peculiar observation.

The first was of a woman whose case was published by^v Winckler. In this subject the Aorta, immediately where it proceeds from the heart, was very large, so as to measure five inches and two lines in circumference. In that dilatation, which terminated where the Aorta approaches near the Vertebræ, there were a great ma-

^u In the Phil. Transf. No. 483. and 492. and in progr. ad disp. clar. viri. J. G. ZINNII.

^x MORGAGN. advers. anat. II. p. 81.

^v De lithiasi in corp. hum.

ny ulcers, the external membrane of the artery being every where degenerated into prominent, fluctuating, irregular excrescences, jagged somewhat like a cockscomb; and these cristæ were scaly, the most part of them ossified, or at least had a bony appearance. The muscular membrane was found, as also the internal. The Aorta was in the same condition, both in the Thorax and Abdomen. In the lesser hypogastric, iliac, and uterine trunks, as also in the other arteries of the Pelvis, which I lately described*, were a great number of crusts, some quite bony, some flexible, and callous, growing in such a manner to the muscular fibres, that the marks of their transverse direction were imprinted on the scales by so many furrows. The valves of the Aorta were partly callous, and others were variegated with stony tubercles, but the valves near the heart were quite in their natural state.

* IV. Fascic. iconum anat.

OBSERVATION XIX.

The carotid artery and jugular vein obstipated^b.

In January 1749, I met with a much more remarkable disease in a beggar woman, who being found dead at the door of an inn in the village of Weenden, was, as the law directs, brought to the theatre to be dissected. Upon opening the abdomen, the Omentum covered the abdominal Viscera, the stomach was very narrow, and even in its largest part, not so wide as the Rectum. The Ovaria had felt the effects of age, being scirrhus and dry, as is usual about the fiftieth year.

Upon opening the Thorax, a swelling of the Aorta immediately presented itself. This artery, just at its exit from the heart, was no less than two inches broad, and in its whole curvature till it reached the vertebræ it became still wider, the diameter being three inches, and the aperture nine times larger than the natural size. As soon

^b In the Phil. trans. No. 483. 492. and in Progr. ad disp. clar. viri, T. G. ZINNII.

as it got to the vertebræ, it recovered its natural dimensions; and so continued.

I opened the tumour, the nature of which was not easily understood; a great deal of grumous blood had gathered about the centre of the artery, but the greatest part of it was degenerated, not so properly into clots, as into broad, tough, whitish films, about a line in thickness, resembling soft floating membranes, and real polipus's. Lastly, the sides of the Aorta appearing to be five or six lines thick, I found an adventitious membrane lining the inside of the tumour, and so intimately adhering to the internal membrane of the artery, as to be easily mistaken for a part of it. This concretion was white, pulpy, lamellated, partly resembling a membrane, and partly retaining the nature of concreted blood, and adhered equally every where to the real membrane of the Aorta. In the artery itself were many white, callous, scaly bodies, which seemed to be full of pus, of the same kind with those which were lately described.

But what surprized me much more was, that the above membrane extended itself to the left carotid only, and not to the other arterial trunks; so that this artery was very full,

full, the whole length of the neck, without the least cavity remaining. For that white, soft, and pretty firm substance which reached from the Aorta to the carotid, which was scarce to be separated by dissection, from the true membrane, like a continued cylindrical polypus, filled the carotid till its division, where dividing itself likewise it ran along each branch of the artery, terminated in the external carotid, and totally disappeared at the origin of the labial artery, which was the first I found open. The trunk of the internal carotid was narrow and constricted, and filled with the polypus all along to the Foramen of the Os petrosum.

Something still more astonishing, was a polypous and fibrous pulp, very like the former, filling up the whole cavity of the internal jugular vein of the same side, and at length terminating in that branch, which passing transversely under the parotid gland, connects the internal and external jugulars. In the lower part the pulp cohered inseparably with the coats of the vein. The other blood-vessels of the body were open, and the carotid and jugular vein of the right side, transmitted the blood freely.

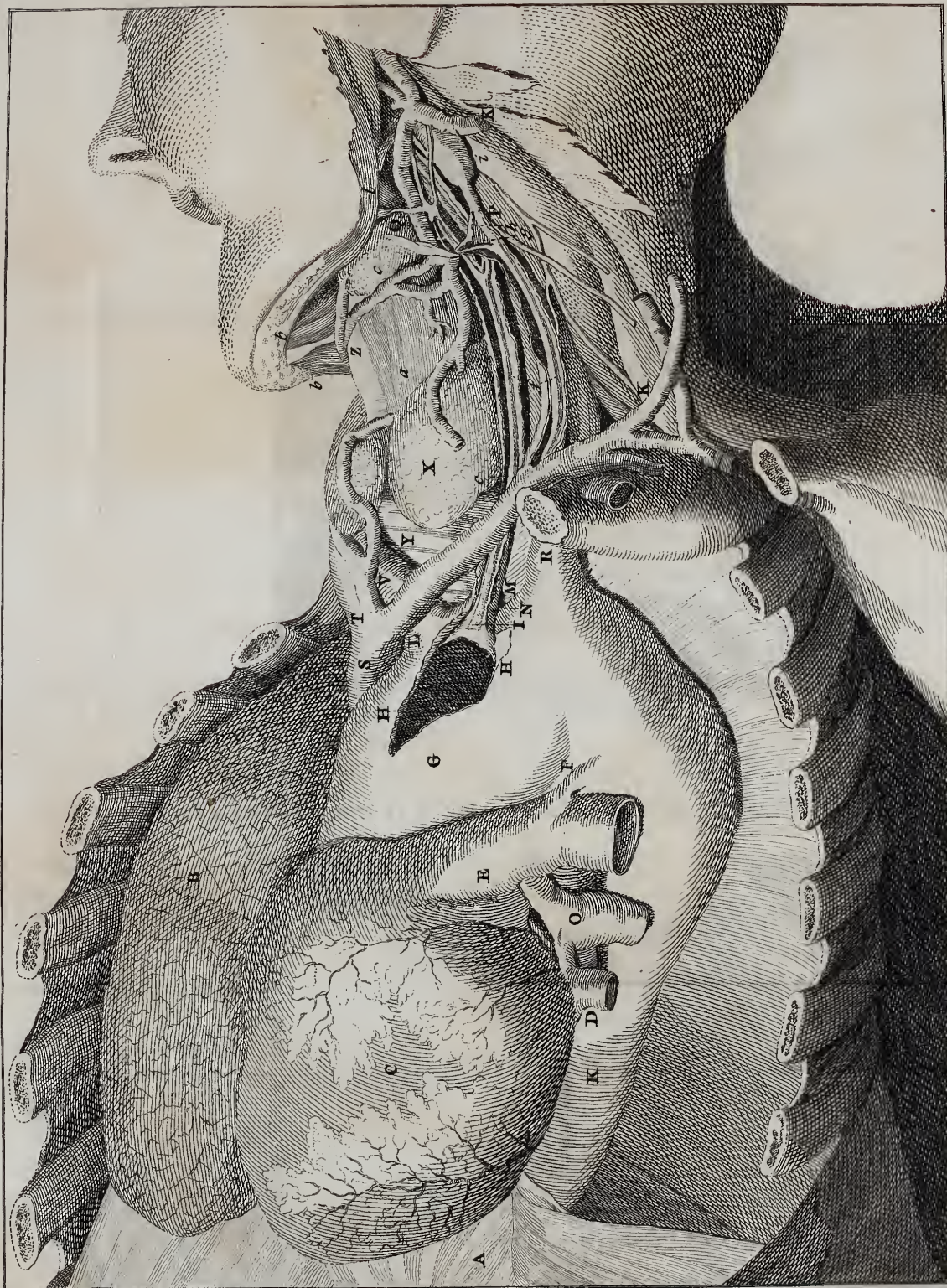
D 4 I had

I had the arteries of the thigh in this subject drawn after they were dissected.

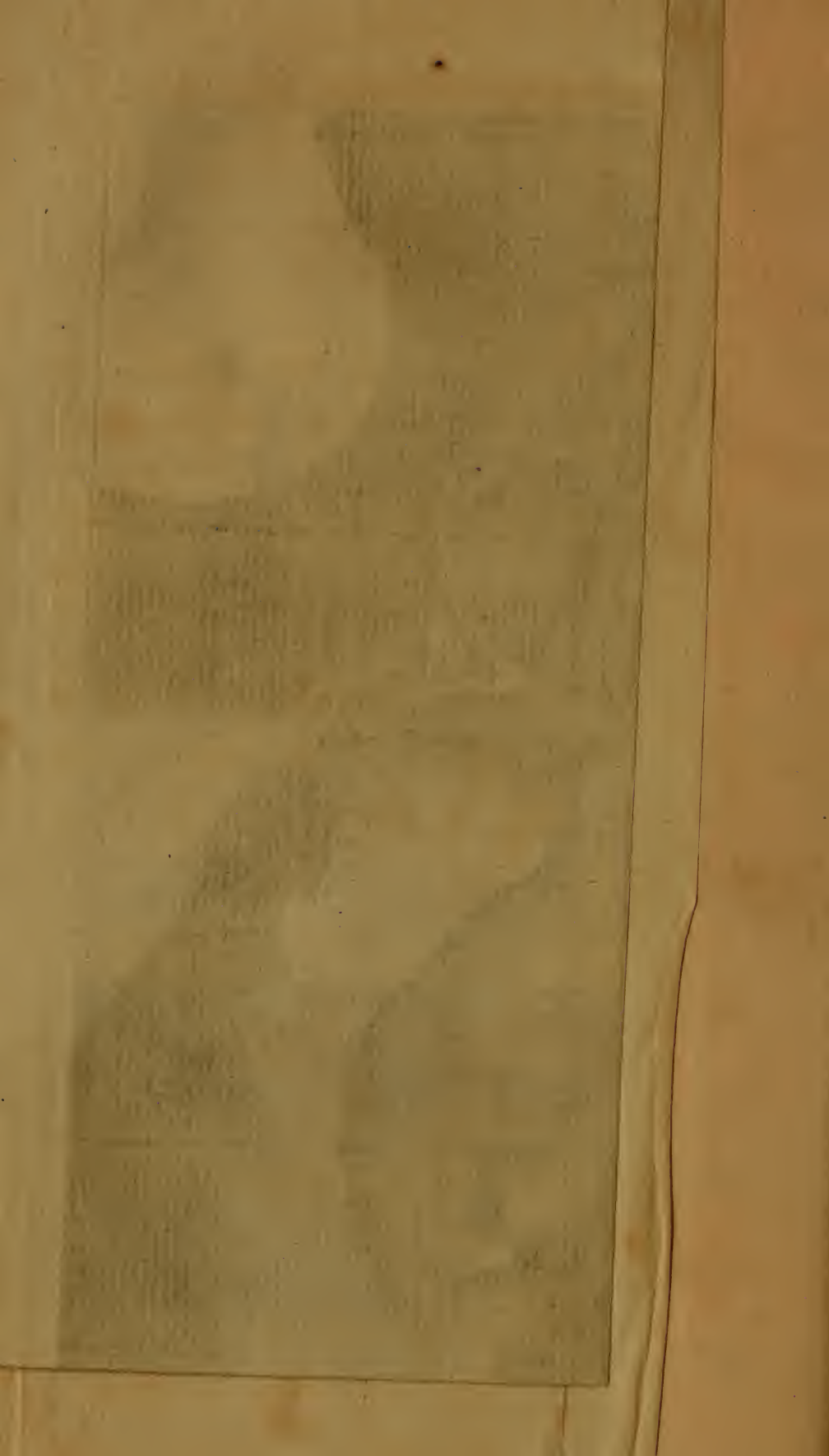
Explanation of the figure. Plate I.

- A. The diaphragm.
- B.B. The right lobe of the lungs.
- C. The heart.
- D.D. The pulmonary veins.
- E. The pulmonary artery.
- F. The arterial duct.
- G. The aorta surprisngly dilated.
- H. Its appearance when dissected.
- I. The polypous, morbid flesh, adhering to the internal coat of the Aorta.
- K. The Aorta in the Thorax restored to its natural size.
- L. The common trunk of the subclavian, and right carotid artery,
- M. The left carotid artery,
- N. The pulpy flesh, with which it was stuffed.
- O. The membrane of this artery laid open.
- P. Continued into the internal carotid, and
- Q. Into the external, the branches of which are narrower,

R. The



PATHOLOGICAL OBSERVATIONS *Fig. 1st page 40.*



- R. The left subclavian artery.
- S. The Vena Cava superior.
- T. The right subclavian.
- U. The inferior thyroid vein.
- X. The thyroid gland.
- Y. The wind-pipe.
- Z. The thyroid cartilage.
- a. The hyothyroid muscle.
- b. The digastrics.
- c. The maxillary gland.
- d. The left subclavian vein.
- e. The left jugular.
- f. The pulpy flesh, with which it was filled
- g. Continued into the superficial veins of the head,
- h. and into the internal jugular, of which the part
- i. Was again open.
- k. The external jugular vein.
- l. The branch which communicates with the internal.

OBSERVATION XX.

*The Vena cava concreted. **

I saw, in the year 1706, a like, if not a more extraordinary obstruction in a wo-

* Progr. ad disp. clar. ZINII.

man a little turned of forty, who had the Vena cava, between the renal and iliac veins, so concreted ^d that instead of a cavity, there was nothing to be found, but a kind of fibrous, polypous, and hard fleshy substance. The blood returned from the inferior Aorta, by the right spermatic vein, which was very much dilated, being an inch in diameter, and from thence passed to the right ureteral vein, arising from the iliac of the same side, and was also preternaturally dilated.

In order to account for the origin and progress of such extraordinary appearances, to me it seems most probable, that the a-

^d There is also an instance of a concreted Vena Cava, in RHODIUS *Mantillæ anat. obs. 21.* and in BLANCARD's *Chir. p. 431.* An extraordinary pulsation was felt above the navel, and synchronous with the pulse in the wrist; the Vena Cava was found full of a fat medullary substance, the Aorta was above twice its natural bigness, and the heart still more increased in its size. In a consumptive subject the Vena Cava near the heart was quite obstructed. BARTHOL. *Hist. 35. cent. 2.*

^c That these aneurisms are owing to the great resistance of the artery, is clear from hence, that this disorder is never found in infants, very seldom in young, and most frequently in old persons.

^f These authors who have lately asserted that the motion of the blood was retarded by the resistance which it meets with, have not duly considered the nature of the living heart, whose action is always proportioned to the obstacles which oppose it.

neurism

neurism of the artery must have been owing to these bony scales produced from the yellow fluid, and hardly susceptible of dilatation. These I suppose so strongly resisted the action of the heart, that in order to overcome the increased resistance, this action was likewise increased; and thus by degrees distended the artery, so as to form a bag like an aneurism. Hence, whenever these bony laminæ are found near the heart, we constantly meet with a dilatation of the trunk of the artery. The blood in this bag, as is usual in aneurisms [§], being slowly impelled, concreted first into grumous substances, afterwards was formed into membranes and polypuses, and lastly assumed the nature of a false and morbid membrane, which by the action of the heart was pressed against the internal surface of the Aorta, and adhered to it. The same polypous blood, propelled into the carotid, filled it, and was converted to a pulpy mass, resembling that which we meet with in the umbilical arteries. The

[§] SAVIARD obs. LXI. and especially FANTON, obs. I.

[¶] Hence, when the arteries are ossified, a mortification frequently happens from the stagnating blood. *Philos. Trans.* n. 280. 299.

reason why the blood in the correspondent vein was polypous, I take to be this, viz. that the artery being obstructed in the manner above explained, the venal blood of that side was of course retarded in its motion, and thus stagnating was become of the same nature with the other. The reason of this concretion of the Vena cava I do not understand, for there was no cause to be discovered in the body sufficient to compress so large a Vein, and there was nothing amiss to be observed in the arteries.

OBSERVATION XXI.

Corpulence ill cured.

Among the diseases which are discovered by frequent dissections, I have found some very terrible ones of the stomach, of which I shall give a concise account, tho' not compared with any other example. Its being frequently wrong situated I shall not much insist upon. I have seen the stomach pushed downward as far as the Ossa ilium, inclined in such a manner, that its lesser arch was turned to the right, and

† Progr. ad disp. clar. ARMSTERI. Goetting. 1749.

its greater to the left side; and of such a length as to exceed eighteen inches. In a dropfical subject, the same viscus, together with the liver, which was scirrhus and adhered to it, was situated as low as the navel. Nor shall I boast how many various shapes I have seen of it: for example, some so violently constricted in certain parts, as to seem almost divided into two; for these are only common appearances.

I am sorry I cannot at present find amongst my papers, the case of a gentleman whose stomach I saw in the year 1734. But as well as I can remember, it was as follows. He was corpulent, and being by profession an architect, which obliged him to use a good deal of exercise, the weight of his belly was very troublesome to him. He had been advised to use acids, and even vinegar, nay perhaps some mineral acid or other; and after having strictly complied with this prescription for above a twelve-month, he found a gradual diminution of his burthen indeed: but the remedy did not stop here, for he fell into a consumption, and from a corpulence which was only inconvenient, he was reduced to a fatal Ma-

rasmus, nauseating food, and throwing up whatever he eat or drank. I opened the body after he died, and stole away the stomach, for it was really worth the while, being a membranous bag, scirrhus, and almost like the Uterus. Its thickness about the œsophagus, and at both the arches, where it is continued into the gullet, was not less than two inches; composed of layers of membranes, with large vessels running between them. Thus it appears, that however healthful acids are to our bodies, and seem designed by nature to preserve our animal food from putrefaction, the excessive use of them is extremely noxious, coagulates the blood in the vessels, and likewise the lymph; the coagulation of which last chiefly appeared from the white flesh of the scirrhus stomach.

OBSERVATION XXII.

Large Cryptæ of the stomach.^k

On the fourth of October 1742, a woman of 64 years of age was brought to the theatre to be dissected. According to her

^k Hamburgische Verm. bibl. tom. I. p. 1. & Progr. ad disp. clar. ARMSTERI.

daughter's

daughter's account, she had been subject to a complaint in her breast, lost the use of her senses, was much troubled with worms and frequent bleedings at the nose. It was evident that the catastrophe had been finished by a dropfy, whereby the subcutaneous cellular membrane, and that which lies between the muscles, as also the Thorax, Pericardium, and Abdomen, were rendered turgid with water. The ventricles of the brain were less affected. The lungs, which is often the case, had large adhesions with the Mediastinum, Pericardium, and Diaphragm. The Aorta was full of callosities, which are frequent enough in old persons, and the intestines swarmed with worms. In that part of the stomach which adjoins to the Pylorus, were ten or twelve hemispherical tubercles, resembling nipples, produced by the villous coat. The points of these tubercles were either black, or quite perforated, their cavities full of pus, and their dimensions very different, some of them being about three lines in diameter, and others a whole inch. This was a very singular case, and affords a conjecture, whether the disease was owing originally to the worms eroding the stomach?

or

or to an obstruction of the Cryptæ of the stomach, which these tubercles resembled very much in their figure, but they were greatly increased in their size. Her appetite and digestion had continued pretty good.

OBSERVATION XXIII.¹

An ulcer of the Colon opening into the Stomach.

One of the most dreadful cases that I have ever known, was that of a woman whose body was brought to the theatre, in November 1744. The Peritonæum, Stomach, Duodenum, Colon, Gall-bladder, Liver, were all grown together in one confused mass, shooting out on all sides small white fibres, which degenerated into a thick and soft body, by which the above parts were in a manner glewed together. So strong was the cohesion, that the Colon could not be detached from the stomach, and there was an open passage from that intestine to the stomach, formed by an ulcer: Hence the Colon was empty, and the stomach in that part which was contiguous to the Colon was very much

¹ Progr. ad disp. clar. ARMSTERI.

disfigured

disfigured with scirrhus tumours and abscesses, but sound at its connexion with the œsophagus. Upon enquiry into the disease, I was told, that about eight years before she was seized with an illness during her lying in, of which she never perfectly recovered, and could neither speak clearly, nor bear any solid food ever after; but most of her sustenance had been small-beer, which supplied her just with sufficient strength to beg about the town.

OBSERVATION XXIV.

A man starved to death.

Opportunities of dissecting persons who have died of hunger very seldom occur; scarce any one in those civilised parts of the world ever being so unfortunate as to come to such a miserable end. Yet in 1728 I saw a man in low circumstances, middle aged, tall, corpulent, and of a very good habit of body, who wilfully starved himself to death in a stable. All the parts were entirely sound, but the stomach and intestines were perfectly empty, without so much as the least remains of excrements; a most extraordinary circum-

E

stance,

stance, seldom or never met with in bodies emaciated under the most lingering diseases. The bile was in great quantity, so as not only to tinge the adjacent Viscera, but to fill a considerable part of the intestines. The size of the omentum was larger than any I almost ever saw, being an inch thick, and it retained the impression of the intestines, nor did the Mesentery and Mesocolon fall short of it in fatness. In the stomach, which was likewise tinged internally with the bile, I saw near the Pylorus a great many orifices of the muciferous glands, about the bigness of a pin's-head, and which upon being squeezed, spewed out the contained mucus. It from hence appears, that the fat of a healthy man is not very soon consumed, even after extreme inanition, and that the bile may likewise be squeezed out of the gall-bladder without any swelling of the stomach. Besides anatomy shews us, that it is not the stomach, but the Duodenum towards the end of its first transverse turn, that presses against the gall-bladder.

OBSERVATION XXV.

A scirrhus of the Omentum.

A young man, as he was drinking with some of his companions, received a kick in the belly, which occasioned a constant pain in the fore part of the Abdomen, with a great weakness of digestion; and these symptoms were succeeded by a slow fever, which at last proved mortal. Upon dissecting him, I found the Omentum as it were folded up, contracted considerably in its dimensions, and about an inch and a half thick. It adhered very firmly to the liver and stomach; within it was a foetid putrid Pus, and the very substance of the stomach was turned to a kind of grumous bloody cancer. The Pancreas was swoln to several times its natural size, and had put on the appearance of a very hard Scirrhus, not unlike the firm fat of a boiled brisket of beef, but of a somewhat harder consistence. The kidneys were compact, heavy, and all of one substance, not divided into two, as they commonly are.—The ureters were enlarged, and the bladder very much increased in its size. The whole body was

much emaciated, but the muscles had lost nothing of their bulk.

OBSERVATION XXVI.

A Tympany.

The Tympany is by no means a common disease. I have only met with it twice, and the last time was in the year 1751, in a woman. The Abdomen was extremely swelled, and the limbs at the same time anasarcaous. Hitherto the Abdomen was void of air, but the intestines were distended to an enormous size; and even in the cells on the outside of the intestines, between the muscular coat and the external membrane, the air had raised vesicles, which when opened stunk intolerably. Thus the first seat of the disease appears to have been in the cavity of the intestines, but in the very same manner as the air impelled through the intestinal canal had penetrated into the cells on the outside of the intestines; I say, in the same manner, during the course of the disease, the air might be collected in the abovementioned cells; neither does it seem improbable, that the external membrane

brane might at last have given way, and the air thus got into the Abdomen from the abovementioned vesicles.

OBSERVATION XXVII.

An Introsusception of the Intestines, without any bad consequences.

I saw in a female subject two Introsusceptions of the intestines; one of them was but short, and the other of three or four fingers breadth, in which the upper part was received entirely within the lower, and yet it remained free from any inflammation, and was very easily extricated. Since that I have seen in a child of a year old another Introsusception, which by blowing air into the intestine, was immediately removed. Every body knows, that in a living body there are almost constantly flatuluses in the intestines, and consequently that those introsusceptions can be of no long continuance. I also saw the like in a child of half a year old, but it was still more evident than the former, a much longer portion of the intestine having entered within the other; and with it the mesentery was drawn into the inferior part

of the intestine as into a tube, besides other similar appearances in the same subject. I likewise met with three Introsusceptions of the intestines in a girl seven years old, where the mesentery was also drawn in. Farther, I found three in a boy of two years of age, who had died of the Small-pox; neither was there the least sign of inflammation in this case. In another the lower end of the Colon had fallen down an inch and a half into the Rectum, in the cavity of which it rested, and which being larger easily contained it. But it was in a living rabbit where I saw how the Introsusception is brought about. In this animal a small portion of the intestine was so slender and constricted, that by the mere force of the longitudinal fibres, it was drawn within the neighbouring part, which was larger: but this portion of the intestine a little while afterwards, extricated itself without any bad consequence, or the least assistance. From this hint I have learnt how to produce an Introsusception in frogs at pleasure. In these animals, if you touch any part of the intestine with any thing corrosive, it is immediately constricted, and soon after the part next adjoining

adjoining to it gradually ascends, and folds itself over the other, so as in a manner to sheath it. But I by no means impute the iliac passion to an Introsusception of the intestines, as KUHNⁿ has done long ago in a thesis of hisⁿ, which opinion he adopted from some appearances which he had observed in dried intestines in RUYSCH's collection. For this complaint is too slight, and goes off too spontaneously to produce such dangerous efforts; and if it was violent or mortal it would discover its force by an inflammation and accumulation of the aliment, at that part of the intestine where the Introsusception is, neither of which have I ever seen joined with this complaint.

OBSERVATION XXVIII.

Congenial Herniæ.^o

Hernias are the most frequent disorders incident to men, which are cured by manual operation; and in Swisserland, my native country, and its subalpine vallies, they are still more frequent than any where else. Thus, in that noble hospital

ⁿ De Ileo diss. Leid.

^o Progr. ad disp. et. STEDDING. Goetting, 1749.

of Bern alone, which derives its name from the island on which it stands, an infinite number of trusses are annually distributed. This has been imputed to the eating of a great deal of butter, and the excessive labour in tilling such a hard and stony soil. I would not totally exclude these causes, but it will appear from the following observation, that the root of this disease very often lies deeper, and that it is no uncommon thing even in a fœtus to find a Hernia, empty indeed, but such as the intestine would fall down into upon the slightest occasion.

In the first place it must be observed, that in fœtuses the testicles are not situated as in adults; in the former, even after they are come the full time, my own observations have shewed me, that the Scrotum is almost empty, and the testicles lodged in the cellular membrane of the loins, contiguous to the kidneys, which is their constant situation in birds and other animals that have no Scrotum. This is incontestibly proved from the experience and observations of eminent authors, and well known to every body. The descent of the testicles is gradual, and after

ter some time, which has not hitherto been determined ^p, they fall down into the Scrotum ^q, always behind the Peritoneum, as now they are situated under it. The cause of this progression seems to be owing to the force of respiration, and the action of the abdominal muscles. But in dissecting an abortive foetus in December 1747, and another the year following, I applied myself particularly to examine the testicles in the foetus, as accurately as possible: both these foetuses were born in the sixth month. Their testicles I found at the upper part of the Os ilium, under the kidneys, inclosed within the Tunica albuginea, whose vessels were remarkably red,

^p See the passages of several authors agreeing in this in Comment. ad. prælect. BOERHAAVE, tom. V. part I. p. 293. and SMETIUS has observed, that in a foetus of four months the Scrotum was not visible. Miscellan. lib. X.

^q For CASSEBOHMIUS has said that the testicles are in the Scrotum by the seventh month; but in new-born infants I have frequently found the Scrotum empty. In some the testicles do not fall down till a considerable time after the birth, (agreeable to the celebrated TREW præf. ad Com. lit. 1736.) so that it is not in infants alone that they have been found in the groins (HARDER æpiar. 200) and a testicle which was lodged in the groins of an infant of six months, was treated as an Hernia, (P. de MACHETTE obs. 53) or in boys (PARCY lib. VII. cap. 19) nor even do the testicles always shew themselves before the fourteenth year, (SALMUTH cap. I. obs. 91.) but there are innumerable instances of their remaining concealed even in adults.

and

and the Epididymis accompanied them at a considerable distance. Each testicle was situated in the upper part of its cylindrical sheath, which it had not yet entered, in such a manner as to be really inclosed within the Peritoneum, whereas in adults it is without. I mean, it was within that cavity of the Abdomen which contains the intestines, at the entrance of the cylindrical Vagina, which is a continuation of the Peritoneum, hollow, empty, about an inch in length, terminating in a cellular substance, connected to the Os pubis by a very firm kind of cellular membrane which might pass for the suspensory ligament.

Farther, in more mature foetuses I have often seen the testicles situated lower, but still in the loins behind the Peritoneum, which in that part was quite imperforated. In the year 1735, in a male infant who died in the birth^{*}, and in 1742, in a foetus of the same kind, I saw under the testicle that sheath, which in a child come to the full time is open. But there was this

^{*} *Commerc. Lit. Nor. ejus anni hebdom. 14. and comment. l. cap. p. 284.* where I have also quoted some analogous observations of GMELIN and HEISTER.

difference,

difference, that in the first fœtus, that cavity which was empty continued downwards to the scrotum, the testicle being lodged above it in the groin, which if it had descended into that vagina would have been situated in the same manner as they are in adults. In the other fœtus the testicle had descended as far as the top of the groin, and the least effort must have pushed it, together with its Vagina, into the Scrotum. Behind the vaginal coat were the feminal vessels in their natural situation.

Hence, if I am not mistaken, the manner how congenial Hernias are formed, very plain appears. The process of the Peritoneum under the kidneys is open, in order to receive the testicle, and that being pressed downwards, as usual, the testicle at the same time is carried along with it, and both together fall down into the Scrotum. But as in these bodies the testicles are contained in one and the same bag with the intestines, it is not at all singular or surprizing that a slight impulse should force down the latter into this open sac.

But here a suspicion arises, although it is rather premature, and will appear not a little paradoxical. It is this: were not
these

these bodies in a diseased state, in which the testicles were situated in the orifice of the sheath abovementioned? Was there on each side of both fœtuses a double congenial Hernia? Whether in every sound fœtus is not the testicle situated at the aperture of the process of the Peritonœum formed into a hollow cylinder, which is naturally pushed down before the testicle, which structure we saw so plainly in both fœtuses? Is it not credible, that in a sound Fœtus the upper part of that bag, depressed by the descending testicle, may be so turned outwards, as at last to be quite inverted, and have its upper extremity imperforated? Is a congenial Hernia therefore produced, when in a Fœtus that process under the kidney is so wide open, that the testicle does not push it before it, but enters into it? These things deserve to be very well considered by all skilful anatomists who are desirous of finding out the truth, and enquired into by experiments; for opportunities of dissecting male-fœtuses, of six months and under do but rarely occur.

Whether in all ruptured persons is the Peritoneum thus formed in the fœtus, or
is

is this dilatation a subsequent accident? Is not this opinion supported by its being commonly observed, that by far the greatest number of those who are subject to ruptures, have contracted them in their infancy : but we have not a sufficient number of experiments to decide all these questions.

I have said, that even in a grown person the testicles have been found situated in the groin, and in adults I have seen on each side an arch that is the upper and internal round border of the tendon of the Obliquus descendens muscle, moved from its situation, and bended in the form of an arch, which being much thicker than usual, the fore-part defended on the convolutions of the intestines, which were fallen down into the Scrotum through the process of the Peritoneum, so that you could easily push them up into the Abdomen, or pull them down again into the Scrotum. The testicle, which was situated in the groin, had not yet fallen down into the Scrotum, and consequently in some measure retained its infantine situation, had firmly adhered to that part, in a position somewhat unnatural, its largest convexity

convexity being most inferior. There was nothing of the Omentum to be found in the Hernia, which was invloped by the skin, and under it there was a firm cellular membrane, interspersed with strong bands of fibres like nerves, and which I easily perceived might with very little impropriety be termed tendinous *.

* Hitherto I had been in doubt concerning the orifice of the Tunica vaginalis, at the Abdomen, but some late experiments have confirmed my former opinion.

In a new born child, whom I examined February 1751, the Scrotum was empty,

* As it is by B. D. MAUCHART in disp. de Hernia incarcerata & J. MERY, in Mem. de L' Acad. des Sciences, 1701. p. 289. where he also attributes cellular Lamella in the hernial sac to the Aponeuroses of the Obliquus descendens and transverse muscle of the Abdomen. But J. F. Cassebohm is of the same opinion with me, viz. that in this external sheath of hernias, as there is nothing but a cellular substance, as appears in a posthumous work of his, p. 150. But those expressions, with many others of the same kind, frequently occur in my manuscript: The same ingenious author has also refuted what GUNTZ has lately advanced in his book de Herniis, concerning the muscular and tendinous fibres of the Dartos, which I never could discover: But in a Hernia, the situation of the testicle in the groin is very dangerous; compression, which is the common remedy, being very improper in this case, and in the operation itself, if the surgeon should go too deep, and was unacquainted with this extraordinary structure, he might easily commit a very fatal mistake.

* What follows is from Progr. ad disp. clar. VATTERLI, Goetting. 1753.

and the testicles situated at the upper part of the groin, on each side of the suspensory ligament of the Penis. The Tunica vaginalis on each side was open. The spermatic vessels and the Vas deferens were situated behind. The orifice itself, which led to the cavity of the Tunica vaginalis, and terminated by a semilunar and very thick margin, was evidently the work of nature, and not the effect of any violence.

But in a still-born child, who was brought to the theatre in the year 1752, I saw another instance still more plain than the former, of the testicle being situated entirely within the Abdomen, more than two inches above the ring of the obliquus descendens muscle, and the Peritoneum embraced the Tunica vaginalis in the same manner as the mesocolon adheres to the intestine. But the Tunica vaginalis in this case also ascended into the Abdomen thro' an actual foramen of the Peritonæum, with its orifice wide over, to receive the testicle. Through the same Foramen, the Cremaster muscle, together with the spermatic vessels ascended to the testicle: wherefore I am almost convinced, that the original

ginal feat of the testicles is in the Abdomen, from whence by the combined force of respiration, crying, and struggling, they are gradually forced into the Tunica vaginalis, and so down to the Scrotum, carrying with them the vaginal coat, till they get through the Peritoneum; and thus this membrane, which at first lay behind the Tunica vaginalis, and surrounded it, is now placed above it. And now I can positively answer to the question above proposed, in the affirmative, viz. that the Tunica vaginalis of the testicle, when the Fœtus is very young, is open at the Abdomen.

OBSERVATION XXIX.†

Umbilical Herniæ.

But congenial umbilical Herniæ are less frequent than might naturally be expected. In April 1747, a new born child was brought to the theatre, into which the Foramen of the Peritoneum could easily be felt through the skin. Upon opening the body, the Peritoneum pushed out in the form of a thimble, towards the common teguments, and was found to have

† Progr. ad-disp. clar. VATERLI, 1735:

some part, though not much, of the jejunum contained in it. Not long after I saw a boy, who was born in the same condition: every application procured by the mother proving fruitless, a great part of the intestines pushed out on the left side of the navel, and the child labouring at the same time under the Spina bifida, died a lingering death, but I had not an opportunity of dissecting him.

Allow me here also to repeat the history of a Fœtus, which I published long ago in the *Commercium Noricum*, ann. 1736, p. 78. and which RITTER, who procured the subject, and was present at the dissection of it, has given an account of in the *Eph. nat. cur.* vol. VI. The infant seemed to be in its seventh month, was a foot in length, hairy, and likewise had nails. I immediately perceived a large bag, which protuberated from the Abdomen. It was covered with fat, as is usual, next to which followed the intestines, inclosed in the Peritonæum, which was very thin, and the muscles of the Abdomen, which were also very slender. Round the tumour, in the tendons, which retained their natural situation, was a white, firm ring,

and at the lower end of the bag projected the navel string, but there was no skin to be seen. Upon opening the sac, within it were found these following viscera, the stomach, liver, spleen, and all the intestines, together with some very slender remains of the Omentum. An unusual lobe went out from the liver to the Peritonæum, and what was no less singular, the Duodenum was fastened to that membrane by a very strong ligament. The bottom of the gall-bladder was almost double pointed; there was only one umbilical artery, which arose from the right iliac, and not much less than its corresponding vein. A similar case is described by RUYSCH, obs. 72, and 73; and by the celebrated AMYAND, in the Philosophical Transactions, n. 422.

OBSERVATION XXX.^a*Other Hernias,*

The publishing the four following histories of more common Hernias will I hope be of service.

^a Progr. ad disp. clar. VATTERLI, 1753.

HISTORY I.

A man about forty years of age, whom I dissected in 1750, had a hernia on each side. The right, which was the largest, was contained in a bag, or the Peritonæum, two inches broad, and reaching to the testicles, with which it was so concremented, that the Peritonæum could not be separated from the Tunica vaginalis. The Dartos and the Cremaster muscle adhered but slightly to it, and there was not the least appearance of any tendon. The Peritonæum, which was of an uncommon thickness, and of an opaque white colour, formed the bag as usual. It descended before the posterior border of the Obliquus descendens, behind the anterior, the Cremaster and the internal oblique muscle lying upon the sac. The anterior border, which was bended in the form of an arch, and somewhat thicker than usual, served by way of a ring to it.

Upon opening the hernial sac I found it quite empty, but so open that the intestines could very easily fall down into it. Its orifice was an inch wide, and in that part

some tendinous fibres of the oblique muscles of the Abdomen adhered to the Peritonæum. The lower end of the hernial sac adhered to the Tunica vaginalis and the navel-string, about an inch above the testicle, and from thence near the Epididymis was slightly attached to the vaginal coat, but very strongly along all that part of the testicle, which is most distant from the Epididymis; so that here manifestly appeared the impossibility, in inveterate cases of this kind, of separating that sac, from the testicles, so as either to replace it, or tie it alone, both which operations are highly extolled by the latest French surgeons. The other hernia was short, more contracted, and empty.

HISTORY II.

A man of sixty years of age, who had perished in the snow, was brought to the theatre to be dissected. On his left side was a very large Hernia. The ring, as it is called, was formed of fibres, such as those which run up from the inferior tendinous border of the obliquus descendens muscle, by the upper part of that foramen
which

which is distinguished by the name of the ring, to the internal border of the same muscle, and so spread themselves along the said border, as I have elsewhere * observed. I did not discover any præternatural thickness or constriction of these fibres, and indeed in my opinion it is not easily understood how in incarcerated Herniæ a strangulation of the intestines comes to be produced. For it is certain that a tendon is neither irritable nor contractile, and therefore these fibres can only constrict the intestines by resisting the return of the fæces.

The hernial sac in this case was of a compound structure, for on the upper part of it, and especially on its outside, there appeared a great number of detached fibres, which I verily believe have been looked upon as tendinous by some very ingenious men †. But they had nothing tendinous, and from the paleness and dissections of them, they seemed rather to be scattered fibres of the Cremaster muscle. The internal membrane of the sac was the Peritonæum, which contained in two different bags, as it were, a considerable part

* Comment. in BOERHAAVE, tom. I. part I. p. 260.

† MAUCHART de Hernia incarcerata.

of the small intestines. For in this case, there was a kind of unusual appendix, which went down from the principal sac, towards the spermatic vessels, large enough to hold an egg, and terminated in the manner of the Cœcum.

The whole spermatic vessels were detached from this bag, and the testicle itself descended a little below it; so that in this and such like cases, there could be no reason for tying the spermatic cord, in the operation for the Hernia. Where the size of the spermatic cord is large in proportion to the Hernia, I am very sensible that some such ligature, made to include both the cord and the hernial sac, would certainly be of service. But to return to my history: The orifice of the ring was so large as to contain three fingers, and allowed some yards of the intestines, above the extremity of the Ilium, to pass from the cavity of the Abdomen to the hernial sac; part of which were white and sound, part of them inflamed, but all quite empty. The mesentery, which was fat, but hard and tense like a cord, fell down together with the intestines into the sac. Wherefore in this case there was nothing lax or
weak

weak in the mesentery, to which the Hernia could be imputed, which was the opinion of ANTHONY BENEVOLUS, though I am far from denying that this disease may be sometimes owing to these causes.

At the bottom of the sac, there was, as usual, a quantity of a brown coloured liquor, such as is commonly found in the Pelvis. To this liquor the same BENEVOLUS, surgeon at Florence, imputes very much the cause of Hernia's, in which I cannot help differing from him, being persuaded that in these complaints this liquor necessarily falls down into the hernial sac, in the same manner as it does to the lowest part of the Abdomen, not that its being there produces the Hernia. Had that ingenious gentleman reflected, that very often hydropic persons are free of any Hernia, he might have been convinced of the harmlessness of this liquor, which is certainly a natural and congenial fluid of the Abdomen.

HISTORY III.

In the year 1735, another hernial subject was brought to the theatre, having a

tumour in the groin, twice as big as one's fist. I dissected it very carefully, and after having cut through the skin, there appeared the cellular membrane, interspersed with a great many cords, resembling nerves, or tendinous fibres. Under this membrane, which was very firm and compact, lay the Peritonæum, which is commonly called the hernial sac, with a part of the Intestinum Ilium contained in it, viz. three or four flexures of it, together with its mesentery, which did not adhere to the sac. An arch defended the loose intestines from compression, so that they could very easily either return into the Abdomen, or fall down into the Scrotum. This arch was composed of the internal border of the external oblique muscle, moved from its natural situation, rendered a great deal more thick, and bended in the form of a bow. There was no testicle to be found in the Scrotum, for they were both situated in the groin, but the position so changed, that the convex part was inferior, and the Epididymis superior, and there was no portion of the Omentum fallen down into the Scrotum, neither were the testicles contained within the cellular substance of the

Tunica

Tunica vaginalis, which was open to receive it. The external arch, which is called the fallopian ligament, was also dilated, and stretched itself both from above and below the spine of the Ilium to its insertion into the Os pubis.

HISTORY IV.

In the month of October 1747, another ruptured subject was brought to the theatre. Here the Peritonæum, which was not less than a line thick, seemed to be pushed down for some inches before the spermatic vessels; and upon farther examination, I found the bag could be divided into two. One of these was the Tunica vaginalis, surrounded by the cremaster muscle, which was thickened, and within it was the Peritonæum, of the abovementioned thickness: the Omentum adhered every where to the Peritonæum, and descended before the seminal vessels, into the Scrotum. In this case no part of the Intestines had fallen down.

OBSER-

OBSERVATION XXXI.

A fatal Prolapsus of the Anus.

I once saw a Prolapsus ani prove mortal, though it is generally looked upon as a trifling complaint. The inverted Rectum had fallen down the whole length of a foot, and the villous coat, which was very red and bloody, was now external.

OBSERVATION XXXII.

An abscess of the liver; mistakes concerning this disease.

HISTORY I.

In the hospital of La Charite at Paris, on the 8th day of September 1727, I opened the body of a man who had died soon after the operation for the Empyema had been performed on him. In the liver there was a purulent ulcer, but not deep, situated very near the surface of it and the diaphragm. I do not mean here to throw the least reflection on those skilful surgeons who had the care of this patient. To determine at all times where the liver terminates,

nates, and where the lungs, requires no small knowlege in anatomy, seeing the diaphragm diverges backwards from its anterior border where it is highest, and descends from the fourth or fifth rib, as low as the twelfth, and even lower. Besides, the disease, and even an ulcer of the viscera, may alter their situation very much, so that the liver being swelled, for example, will thereby occupy a larger space, and push up that part of the diaphragm which is contiguous to it into the Thorax; yet as opening the breast in a disease of the liver does no honour to the operator, and as no pus followed after the operation, the matter spit up must have been found, and like the natural mucus, should have been consulted, and likewise the respiration, which every body knows must suffer more from a disease of the lungs than of the liver.

HISTORY II.

I was witness to another case somewhat a-kin to the above, which was mistaken by very eminent surgeons for an absces of the liver. After a very violent pain a tumour suddenly arose, which yielded to the touch,
and

and upon compression quite disappeared. It was attended with a slow fever and a jaundiced complexion, which made the surgeons suspect that the liver was affected: the tumour was situated below the Scapula, not far from the back-bone, near the tenth rib. Upon making an incision, a great quantity of extravasated blood was found between the muscles and the ribs, the case being really a spurious aneurism. The night after the incision the hæmorrhage increased, and the patient died. Upon examining into the cause of the disease, there was a great deal of grumous blood found in the cavity of the morbid sac, which was nevertheless shut up on all sides, and neither communicated with the Thorax nor Abdomen. It is sufficiently evident, that even the great arteries are capable of bursting suddenly in living subjects, and thereby producing mortal hæmorrhages, instances of which we have related by eminent men, of the coronary and other arteries; and therefore the pressure of the blood against the sides of the arteries is not so gentle, nor the distension so slight, as some mathematical physicians would demonstrate it to be. We did not examine
mine

mine the trunk of the artery, and indeed from its situation it might be no more than one of those branches which are sent from the intercostal arteries to the subcutaneous muscles, and even to the skin itself,

HISTORY III.

A girl of fourteen, had an abscess of the liver full of pus. The liver was likewise, by a præternatural cellular substance, so firmly connected to the Colon and Jejunum, that upon separating the Viscera which had coalesced, the muscular coat of the intestines followed. The Omentum was not to be found, and the whole cavity of the Abdomen was full of pus, which was the source of the fatal consumption of which she died.

OBSERVATION XXXIII.

Stones in the gall-bladder.^z

Whatever truth may be in CYPRIAN'S axiom, that drinkers of wine are very sub-

^z Progr. ad disp. celeb OEDERI. 1749.

ject to the stone, whereas it is very seldom found among drinkers of beer, certain it is, that by a peculiar happiness, there is no disease more rare at Gottingen than the stone in the bladder. Out of two hundred and thirty bodies of different ages and sexes, and, as may be supposed of a low class, dissected by me in the theatre, I have found only two who had a stone in the urinary passages. One was lodged in the Pelvis of the kidney in a boy, was large scabrous, angular, and had somewhat the appearance of a sand stone, but the kidney otherwise sound. The other not quite so large as a pea, was lodged in the Ureter of an infant, which it obstructed in such a manner, that below the stone it was contracted almost to the smallness of a thread. After these allow me to mention a stone that was taken out of the intestines of a horse, and made a present of to me, formed upon an iron nail (such as ANTHONY VALISNERIUS, an admirable observer, gives us several examples of) shaped in the form of a kidney, very heavy, and perfectly resembling a natural stone. Stones in the gall-badder are indeed much more frequent amongst us, and
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this disease, which was but little known to the antients, is either growing daily more common, or at least is more often observed in these countries; so that as medicines have been discovered for dissolving the stone in the bladder, it is greatly to be wished that some remedy could be found out against this species of the Calculus. For it is no less excruciating and fatal to the patient, admitting much more seldom of a chirurgical operation and then only when the ulcerated gall-bladder adheres to the Peritoneum, which every body knows happens but very rarely.

HISTORY I.

To confirm what I have said of the frequency of the stone in the gall-bladder, I shall produce some instances of which I was an eye-witness in my anatomical theatre. In 1742, a woman whose stomach about the Pylorus was greatly contracted, had the gall-bladder all over of a white colour, and quite empty of bile: within it were two white chalky stones, about the size of a filberd, which under their

external coat were of a deep green colour, that terminated in yellow. Each of them was contained in a proper Capsula, as it were, that of the lower one being formed of the bladder contracted round it, to which it adhered pretty firmly. However, they were so soft that they crumbled away of themselves. There was no appearance of her having had the jaundice. Allow me to add, that these stones had afforded nourishment to some invisible animalcule, which had gnawed angular furrows in the external cretaceous surface^a, besides burrows which they had made in the yellow substance within. Being thrown into the fire, they cracked, flamed, and like other calculi, when melted threw out some small drops.

HISTORY II.

In the year 1743, a woman was brought to the theatre who had certainly had the jaundice, the water contained in the Abdomen produced from the condensed exhalations there, communicat-

^a These were of the cretaceous kind described by MOSER, in *Disp. de Vesicula felleis*, p. 22.

ed a yellow colour to whatever touched it. The Omentum had put on a fleshy appearance. The liver was morbid, ulcerous, and its vessels void of blood, but in the gall-bladder were found fifteen stones, four of which were rather larger than a filberd, the rest smaller, angular, and somewhat cubical in their shape. That which was nearest the cystic duct had a kind of beak, which went some way into that duct. What bile remained had very little either of its natural colour or taste. These calculi were black and light, and in the fire blazed like sealing wax. Upon taking off the outward coat, which was thin and black, the inside appeared of a bilious yellow colour.

HISTORY III.

In the month of March 1745, there was brought to the theatre the body of a man who had been melancholy mad; which disease, together with the cold, had killed him. In this body, which otherwise was very sound, the liver was so enlarged, as to be in contact with the spleen. The bile in the gall-bladder was very little bitter,

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but

but in it there was a calculus, nearly equal in bulk to the bladder itself, in shape resembling an olive, and beautifully variegated with different tints of brown. The two ends were yellow, and a streak of the same colour intersected it longitudinally. The rest of the stone was of a deeper colour, and marked with chestnut brown circles. It was light, and felt as it were villous, but I did not examine it within, for being uncommonly beautiful, I did not chuse to break it.

HISTORY IV.

In another woman, who was said to be a hundred years old, and whom I dissected in the year 1746, the gall-bladder had little bile in it, and that hardly bitter. A small yellow, angular stone was found under the first valve of the cystic duct, which hindered the efflux of the bile. In the bottom of the gall-bladder was another of the size of a filberd, besides several small ones.

HISTORY V.

In a woman who had murdered her child, and was dissected in January 1747, the gall-bladder was found long,
narrow,

narrow, and almost empty. The little portion of bile that remained in it was of a pale yellow, and had lost much of its bitterness. There was likewise a small stone, shaped like a mulberry, round, and every where full of little tuberosities, of a blackish colour, but when dried it became yellow. It had this in common with others of the same kind, viz. that the blackness on the outside wore gradually off.

HISTORY VI.

A woman who was drowned in the month of April the same year, had the gall-bladder so full of little stones, that they were scarce to be numbered, one of them was shaped like a die, but the corners of it obtuse; another was rather triangular, and many of them small polygons. The external coat was white, and the one next it green.

HISTORY VII.

In January 1748, I dissected a woman who had been hanged. The body appear-

ed to be perfectly sound, and the intestines as is usual in persons who have been strangled, were of a very red colour. In the gall-bladder I discovered eleven stones, one in the Ductus cholidochus, three in the entrance of the cystic duct, and all of them shaped like a mulberry, composed of a great many small calculous concretions like grape-stones, almost round, glistening like chrystals ^b, and semi-pellucid. One of them happening to break of its own accord, its internal structure was thereby discovered. The outer coat was of a dark colour, and within that the stone resembled that called the Selenitis, shining and sending out radicated striæ, composed of crusts and small flakes, from the centre, which was yellow, to the external surface. The other smaller ones were conglomerated, white, round, and resembling grape-stones, within also flaky and shining like the Selenitis. The bile was in small quantity, green, and almost insipid.

^b The chrystalline Calculi mentioned by HENRY ALBERT NICOLAI in obs. V. and formerly by G. FABRICIUS HILDANUS in obs. XXIII. cent. VI. seem to have been of this kind.

HISTORY VIII.

In another woman, who is still alive, a spontaneous ulcer in the Epigastrium, of the sanious kind, at times produces gall-stones, a case similar to that mentioned by PETIT. Some of the triangular ones I keep, on account of their being rare, and these also are inflammable like sealing-wax.

HISTORY IX.

I shall add another instance of a very skilful lawyer at Gottingen, who after an acute fever was seized with various obstinate complaints of the liver; viz. the yellow jaundice, an inflammatory fever, perpetual vomitings, the black jaundice, and an oppression at the pit of the stomach, which terminated in death. The gall-bladder was totally consumed, and in the middle of its putrid substance I found stones which now lie before me, exactly oval, of the colour of wood, solid, somewhat scabrous, shaped like the gall-bladder, and above an inch in length. A considerable part of the liver was putrified.

HISTORY X.

I have compared the Calculi in oxen with those in the human body. Of those taken out of the gall-bladder and its ducts, I have some tubular, mucous, of the very same figure and size with the ducts, and of a deep yellow colour. Those taken from the gall-bladder in these animals are generally lighter than the human, irregular in their shape, black, and cortical, and under this black cortex is a fissile, lucid substance, almost like that described in Obs. VIII.

This seems to be the most frequent disease in adults, of which the true vestiges may be traced in the body after death.—As far as I have observed, it never attacks very young persons or children. My experiments shew it to be sometimes accompanied with the Jaundice, but for the most part without it. From history IX. and III, it appears, that the size of the Calculi is often so large, as to leave no hopes of their passing through the Ductus Cholidochus; and according to the descriptions in the same histories, they are of

various figures, angular, cubical, cylindrical, spherical, and some in the shape of an olive. Some of them are only calcarious concretions, and in others the successive accretions are distinguished by very beautiful striæ. Those which were simply calcarious, I never saw inflammable. The bile in the case of a Calculus of this kind was always effæte, and without its natural bitterness, but frequently there was hardly any to be found. In many the liver was not in the least affected ^d. History IX. is the only instance of an adhesion to the gall-bladder, in the others it was quite found and entire. The dilatation of the Ductus Cholidochus, or Cysticus, taken notice of by CAIETANUS TACCONUS, and others, I have never yet observed.

^c For that there are others not inflammable is commonly known, and confirmed by the experiments of the celebrated MORGAGNI *advers. anat.* III. *epist. anat.* III. *Reçt.* But amongst those that I have seen not only the black, but likewise the white, cretaceous, and even the selenitic, pellucid, and chrystalline, caught the flame.

^d That the stone in the gall-bladder is not always attended with the Jaundice, nor the Jaundice with the stone, has already been observed by LOUIS LE VASSEUR TRIUMVIR. SYLV. p. 24. and also by MORGAGNI.

HISTORY XI.

In the same year 1749, the body of an old woman was brought from the country to be dissected. Her gall-bladder was full of a viscid bile, partly yellow, and partly black, which likewise stuck close to the Calculi, and gave a blackish hue to their external crust. These Calculi were three in number; one was large, and nearly cubical, inclosed within the proper cavity of the gall-bladder, which had constricted itself at each extremity of this stone; the two others were likewise large, and all of them adapted to one another with small polished surfaces, like the small bones of the wrist. There were besides thirteen smaller stones, yellow, rugged, and of different figures, lying by the others. The cystic duct was open, and received the bile freely from the liver. There were no symptoms of a Jaundice in this body.

HISTORY XII.

The same winter I dissected another woman who had a good deal of bile, reaching

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ing as high as the valve of the Pylorus ; yet there was none in the stomach. In the gall-bladder were two large stones, of a cubical roundish shape, with four correspondent sides in each. The bladder had a great deal of bile, only subacrid and scarce bitter, as is usual when there are stones in it. The cystic duct was free, but the bladder was connected to the adjacent Viscera by a great many ligaments. The Ovarium had in it several callous little Ova, in appearance like warts, full of a coagulated matter.

HISTORY XIII.

In the autumn of the following year 1750, the body of a man who had been hanged was brought to the theatre. In his gall-bladder were two stones, and of a pale-yellow colour. The largest was oval, almost in the shape of the bladder, which was void of gall, and the bottom of it filled with this stone, to which it every where closely adhered. The other was small, yellow, and stuck in the entrance of the cystic duct, amongst a great quantity of yellow

low and very bitter bile, wherewith the duct, which had suffered a considerable dilatation, abounded.

This body evidently shewed that the bile is sent from the liver to the bladder, and not secreted in the bladder itself, as many of the ancients and moderns have imagined, especially SYLVIVS. For if the bile was secreted in the gall-bladder, in this case its source must have entirely failed, a great part of the bladder being quite dried up, and filled with the Calculus; from whence it might have been expected, that the cystic duct should be considerably straitened, seeing only a small quantity of bile would be sent through. But that duct being dilated, and a great quantity of bile contained in it, hence it evidently follows, that it was sent from the liver^f; and that by it the cystic duct was distended, seeing it could not make its way into the bladder, which was filled with the Calculus. That the bitter quality of the bile may likewise

^f Com. Boerh. III. p. 161. with which compare a like instance of Mr. LIEUTAUD in Mem. de l'Acad. des Sc. 1725. Obs. I.

be produced in the liver, appears very evident from the same Observation^s.

HISTORY XIV.

After that in the same year, I dissected a dropfical woman, who had a scirrhus liver. The gall-bladder was large, and contained a whitish liquor, perfectly insipid, and in it a surprising quantity of little stones, being no fewer in number than 141, which I believe has seldom been exceeded in one subject. All of them appeared to have been round at first, and afterwards put on the resemblance of dice, adapting their smooth surfaces to each other. The Ductus cholidochus was full of common yellow bitter bile, but the cystic duct had three small stones sticking in it.

By this instance likewise, my opinion, which I formerly published, is confirmed. For both the gall-bladder and cystic duct being full of little stones, there was no bile to be found in the bladder, but only

^s Com. BOER. I. p. 422.

a watry mucous fluid secreted there by the exhaling arteries. On the other hand as nothing could come from the liver to the gall-bladder, so nothing could descend from the gall-bladder to the liver, and yet the Ductus choledochus was full, which proves that the bile is secreted in the liver: and this had all the qualities of real bile, without any additional secretion from the gall-bladder; as in the bile of the elephant nothing seems wanting ^h, although this animal has no gall-bladder. Farther, the liquor secreted in the gall-bladder, is by these and many former experiments ⁱ proved to be mucous and insipid.

Another corollary which may be deduced from this dissection is, that the gall-bladder, together with the bile, is subject to a considerable motion. For although my experiments demonstrate its irritability to be but small, seeing it can only be excited by corrosives, and CASSEBOHM ^k and other late writers will not allow any fleshy fibres to be in the gall-bladder; yet the contrac-

^h Prim. lin. physiol. n. 691.

ⁱ Progr. ad clar. OEDERII. disp. n. 4, 5, 6 8. 12. BENNET theat. tabid. p. 58. act. Suecic. 1726. p. 156.

^k Comm. in BOERH. tom. III. p. 151.

tility of it is evident from its constriction round the Calculus¹, and the smooth surfaces of the little stones must proceed from their mutual friction, by which their roughness was taken off. But whether this levigating force was the effect of the muscles, or of respiration, it must evidently be sufficient to expel the bile out of the bladder.

Allow me to add, that in the bladder of a mouse, which I killed in making my experiments upon irritability, I found a very large jointed tape-worm contained in the gall-bladder. It was three inches long, and half a line broad. Hence, by the bye, it would seem that these insects are not much afraid of bitters.

OBSERVATION XXXIV.

The first stamina of the stone in the kidneys.

If I am not mistaken, I have often perceived the original constituent matter of the stone in the kidneys, and it has a very near affinity with the first rudiments of the crusts which grow upon the arteries when they ossify. In the kidney of a ten-

¹ Progr. ad Oeder. n. 3.

der boy I found the Ductus Belliniani full of an orange-coloured mucilaginous substance; and the like I once observed in the body of a man: but in a woman whom I dissected October 1741, it was white, and so hard as to rattle when I shaked it; so that it would soon have concreted into a perfect stone.

OBSERVATION XXXV.

An incontinence of Urine^m.

Akin to the disorders of the urinary passages was the case of a young man, a near relation of mine. He had been very healthy till he was five years of age, when an ulcer broke out in his groin, which being neglected brought on an incontinence of urine; and this being also for some time left to itself, the acrid injections which were afterwards used, proved of no effect, and it remained incurable. After languishing near thirteen years under this complaint, he was seized with a hectic fever; accompanied with a head-ach, thirst, and a loathing of all food: to which was joined, as is usual, a Diarrhea, with a sense of a burning heat in the stomach, (of which

^m Com. lit. Nor. 1734. p. 187.

I have often heard phthifical people complain) a longing for cold water, and a weak and soft pulse; at last the looseness stopped, and cold sweats came on, followed by the loss of speech, and death at last put an end to his misery.

In order to come at the cause of this fatal incontinence of urine, the body was opened. The left kidney was large, scirrhus, and ulcerated in its external surface. The Pelvis and Papillæ very found, and oozed forth Pus, in the same manner as they do urine in the kidneys of a sound person. The right kidney was still in a much worse state, being all over purulent, and the Pelvis full of Pus and tophaceous matter. It likewise adhered very firmly to the Diaphragm, the Pus usually glewing the neighbouring parts together, like a kind of cement. The bladder was thickened, appeared almost fleshy, and spewed out Pus every where. The prostate gland was scirrhus, the Penis mortified, and a perfect Phimosis, the prepuce being swelled by the gathering of stones betwixt it and the Glans.

The cause of this incontinence of urine, was unquestionably the perpetual irritation
occasioned

occasioned by the plentiful discharge of the Pus, and the scirrhus of the prostate gland, which prevented the bladder from being shut.

OBSERVATION XXXVI.

Ulcers of the bladder.

The female sex is more especially subject to various deformities in the shape of the bladder, and very often one side is larger than the other. For it is in a manner natural to them, and not to be reckoned a disease, especially in women who have born many children, to have the bladder prominent on each side of the Rectum; and to this its large appendages in them is originally owing. But in a man I saw a bladder which when inflated became full of little cells, owing to a kind of strong network of muscular fibres on it, the intervals whereof were swelled by the inflated air; and this may be looked upon as the origin of these lesser appendages, which the present age has classed amongst the most important chirurgical diseases: For if a stone should happen to be lodged in such a weak part of the bladder, this will necessarily give

give way, and be contracted into a kind of bag, whence that hard and heavy body cannot be expelled. In this manner are produced incysted Calculi, which are of all the most dangerous.

OBSERVATION XXXVII.

A Prolapsus of the Vagina.

When this Prolapsus was in sight, one half of the upper part of the vagina was prominent in the form of a large apple, and red. After going to stool the whole disappeared. The orifice of the Uterus was lacerated; I have elsewhere taken notice of its being divided into two bumps. This is that slight complaint to which the very learned LINDEN, in his *Physiol. reform.* p. 322. has given the name of Columella.

OBSERVATION XXXVIII.

A Laceration of the Uterus ^a.

HISTORY I.

The frequent sudden deaths of women in child-bed are often very afflicting

^a Progr. ad disp. clar. SCHMIDII, 1749.

to whole families. In most cases of that kind an hæmorrhage has been blamed, and perhaps not always without reason. But I have discovered causes of it, which are still more insuperable. On the first of July 1747, there was brought to the theatre a woman, who was delivered after a very hard labour, attended with cold sweats. I dissected her about half an hour after her death, and found a large hole in the left side of the neck of the womb, both in the neck itself, and in the Peritoneum which connects the Uterus to the Vagina. The neck was full of confused valves, the Uterus itself almost scirrhus, very thick, and though thinner at the interval between the Fallopian tubes than elsewhere, yet even there it was a full inch in thickness, and had a number of white transverse fibres. In the middle space above the neck, the Uterus was almost two inches thick, compact, and full of small orifices of arteries. That part to which the Placenta had been fixt, had a great many little portions of the Chorion adhering to it. The adhesion of the Placenta had been circular, between the Fallopian tubes, which went off below
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the middle of the Uterus, and were pendulous as usual.

One of the Ovaria was quite found, in the other a small Foramen appeared, together with a vascular pellucid tumour. From the Foramen went a pellucid vein, not very small; and an incision being made into the tumour, it appeared to be a Corpus luteum, spherical, separable from the Ovarium, yellow, vascular, furrowed, and clustered like a bunch of grapes, without any Fovea. Under it were vessels of a pretty large size, and in the same Ovarium, there were likewise other small Ova, as they are called.

In the neck of the Uterus, a little above its orifice, were a great many large, oblique, mucous sinuses. The inferior duct situated near the middle of the Vagina, was about an inch long, and without any gland.

The anterior Rugæ of the Vagina were found, and the sinuses at the Urethra full of mucus. The internal membrane of the Uterus was thin, smooth, adhering very firmly, and here and there porous. Under it was an immense number of veins, which were very turgid.

The fleshy substance of the Uterus was full of chinks, unequal, lobular, conglomerated as it were, and of a white colour.

The Uterus itself, properly so called, was of a globular figure.

HISTORY II.

On the fourth of September 1748, another healthy woman died in child-bed. The Uterus was near five inches long, and as many broad, flattened both before and behind, extended a little above the margin of the Os pubis, and covered the bladder. A little below the Cornua of the upper part of the Uterus, not from the middle, came out the Fallopian tubes; and the convexity of the Uterus betwixt the two tubes did not exceed that in a woman who is not pregnant. Having injected it with wax, I perceived a hole in the Uterus on the right side of the orifice. Upon farther examination, the spongy flesh at the orifice of the Uterus, was found degenerated into a number of grumous, very thin, reticular membranes, without the least appearance of the ring which is commonly found there.

there. In the same state was the contiguous part of the Vagina, and where its texture was not quite destroyed, it consisted of fibres and cellular membranes cohering weakly together, and variously intersected. The upper part of the Vagina was very much dilated, but not so the inferior. In that spongy part the Uterus was thickest, but at its bottom it did not exceed six or eight lines. Instead of sinuses, I observed a kind of smooth, cylindrical veins, full of ramifications. The ligaments were also of an unusual thickness.

HISTORY III.

On the 8th of Nov. 1748, I dissected a young woman, who had taken some strong purgatives, in order to procure a miscarriage, and died in convulsions within fifteen minutes after she was delivered. The spermatic vessels, as VESALIUS formerly observed, were an inch thick; the Uterus was raised a few inches above the Pelvis, collapsed, firm, pulpy, and thick.

The neck of the Uterus was torn, and through the lacerated part the head of the

foetus had passed, about an inch above the Pudendum. In the sound part the Rugæ had scarce suffered any alteration; the internal part of the orifice of the Uterus was wide open, appeared to be lacerated, was thin, flocculent, and about two inches broad. The inside of the Uterus was full of blood, which being washed off, there appeared a great many white, ragged, flocky substances, as if the texture of the Uterus had been converted into wool. More internally I observed a number of very thin membranous Lamellæ, an inch or more in breadth, which consisted of the Chorion, so grown to the Uterus, as to put on the appearance of its internal membrane.

In the substance of the Uterus, which was more than six lines thick, there were a great many orifices of veins, into which air being blown, it passed in the form of bubbles through orifices of different sizes, some being pretty large, and others very small, into the cavity of the Uterus.

The muscular fibres were red, broad, disposed into Lamellæ, very numerous, and in various directions. It was hardly possible to reduce them into order; some of them descending to the orifice of the Uterus,

rus, some surrounding it transversely, and many of these last immersed as it were in the former, which they exceeded both in number and size.

The valves of the neck of the Uterus were slender, at a considerable distance from each other, full of very small pores and Lacunæ.

The Tubæ Fallopianæ, which were very long, and the round ligament, came out of the Fundus of the Uterus. This last was sent off long before POUPART'S ligament, and terminated in vascular filaments.

In the other Ovarium there was a fissure, and a pellucid Corpus luteum, not exactly hemispherical, of a reddish-yellow colour, and hollow. The cavity was half a line broad, not deep, but very vascular at its bottom; and besides there were pretty large Ova, about two lines broad, contained in the same Ovarium. Wherefore the Ova are not consumed by the Corpus Luteum.

* In the two Uteri, where the neck of the womb was lacerated, the side of the neck was burst, which seemed to be owing to the oblique situation of the Fœtus at the

* Ad disp. JOACH. VOSSE, 1749.

time of birth; for it is probable, that its head did not present itself directly against the orifice of the Uterus, but pressed against the side or neck of it; and thus the vessels of the neck being pressed, the circulation of the blood through them was obstructed. Hence the veins, which at that time were both very large and thin, easily burst, and the blood being poured out both from them and the arteries into the neighbouring cellular substance, a swelling was produced, with a sugillation, softness, and a kind of mortification in the neck of the womb. And lastly, by the repeated efforts of the head, not directly against the orifice of the womb, but the sides of the orifice, the neck came to be lacerated. These things appear to me to be so evident, as not to require any demonstration. This oblique posture of the Fœtus to which I impute the bursting of the Uterus, has been represented by HENRY A DEVENTER, f. 37, and 38, but, as far as I remember, without taking any notice of the fatal event which I think is to be apprehended from it. But MULLER, who likewise met with a case of the same kind,

kind, has given a more full account of it in his "Diff. qua casus rarissimus uteri in partu rupti sistitur," Basil. 1745.

In History I. of a woman, out of whose womb a child had been newly taken, I said that the rugous ring of the Vagina was not obliterated; and the case was the same in another body, History III. which induces me to conclude that these rugæ are either quickly restored, even within a few minutes after delivery, which seems scarce probable, or that they are not entirely designed for the more easy extension of the Vagina, by their dilatability.

In women who have died in labour I have always seen processes of the Chorion so intimately connected with the Uterus, and so perfectly resembling it, that there seems no manner of doubt of something being transmitted that way to the Fœtus by the Uterus. On this occasion however I must not omit mentioning, that this very winter, I saw in a Fœtus that had been injected by the umbilical vessels, a pretty large artery filled with the wax, and its branches dispersed all over the Amnion. RUYSCH Epist. XIII. p. 10. NOORTWYCK de Uter. grav. p. 14. and several others, have denied

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ed the existence of any red vessels capable of being injected, in the human Amnios. Lastly, it is certain, as I have elsewhere observed, that as the Villi of the Placenta are almost invisible, so the orifices of the veins of the Uterus, which open between the muscular bands of fibres are very large. But this does not hinder lesser veins likewise from opening into the cavity of the womb, and even these are very large when compared with the Villi of the Placenta, as Mr. ALEXANDER MONRO has justly remarked, Medical Essays, vol. II. p. 134. Wherefore it appears that many small arteries of the Placenta open into one single vein of the Uterus.

After I had published my Commentary upon BOERHAAVE, I found in three bodies where the Uterus was burst, and in other pregnant Uteri, that the tubes are very little affected by pregnancy; and that the part of the Uterus between the tubes is not much increased, and but a little convex. But as in pregnant women the tubes are almost pendulous, and therefore parallel with the Uterus, hence it seems to have happened, that DEVENTER Lum. obstet. p. 400. and other anatomical writers, have made

made the tubes during that state to go out a long way below the upper part of the Uterus (compare Comm. BOERH. p. 218.) Dr. PARSONS likewise observes, that there can be no such thing as a superfœtation, because in pregnant women the tubes come out below the Fundus of the Uterus, and cannot reach to the Ovaria (*of Muscular Motion*, p. 77, n. 15.) But these assertions are proved to be false by many experiments which I have lately made. For it is certain that superfœtations do happen, and in pregnant women I have seen the tubes of such a length, as to be capable of reaching the Ovaria very easily.

The Corpora lutea, I have so frequently met with in women, that now I look upon them as nothing uncommon; yet I shall add a few remarks upon this subject. And, 1. I never saw two Corpora lutea in one woman. 2. I never saw a Corpus luteum where the woman was not pregnant, or even for any considerable while before the time of labour, and consequently never before puberty; all which is very different from the doctrine of VALISNERIUS, *Generaz. dell. Uomo. II. c. n. 16. 25. c. 5. n. 8*, and elsewhere, see p. 140. Comment.

BOERH.

BOERH. V. p. 1. 3. The Corpus luteum does not consume all the Ova ; for I have seen great numbers of them along with the Corpus, contrary to what several authors have asserted, Comm. BOERH. I. c. p. 142, 143. 4. In the human Fœtus, and indeed before the age of puberty, I have never met with any Ovula, the Ovaria before that age being long, narrow, flat, without any prominence, and in their figure, and dry texture, very different from those of adult females. These truths invalidate the observations of VALISNERIUS and some other authors of reputation, who describe the Ova even in Fœtuses and new-born animals, as if they had really seen them. Comm. BOERH. I. c. p. 148.

Those women who expire after a very hard labour, oppressed with faintings, cold sweats, and excessive weakness ; those women, I say, for the most part do not owe their death so much to the violent hæmorrhage (which I do not believe to be so suddenly mortal, from the examples of persons who have been wounded) but rather to a laceration of the Uterus. For in women who have had that part wounded from different causes, as has appeared after

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ter their death, I have observed the very same symptoms to happen, as in those who too often are carried off within half an hour after delivery ; but whether the rashness or unskilfulness of midwives, or incurable diseases, prove fatal to the patients, the grave for the most part prevents our discovering.

In women who have died of acute and spotted fevers, I have often seen the blood ooze spontaneously out of the mouth ; and this has given birth to the story of the Vampyres, which lately made so much noise all over Europe, and was first propagated by some imperial troops quartered in Hungary ; viz. Persons who had died of acute diseases, and especially women who had perished in child-bed, and been hastily buried, as usual in hot climates, were found upon opening the graves, with their mouths foaming with blood. The other particulars were the fruits of imagination. The first account I meet with of this epidemical superstition is in ANTHONY GALATHEUS de Situ Japygiæ, reprinted in a late voluminous collection by PETER VANDERAA. The cause appears to me to be
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no other than the expansion of the elastic air contained in the lungs, which forces upwards the blood, with which that Viscus is overcharged towards the end of those fatal diseases, from the broken small vessels resembling in some measure the foaming of fermenting liquors. This morbid state of the Uterus and Vagina, shews these parts to consist of a common cellular membrane; for nothing can more resemble the common cellular structure, than the lacerated and mortified fibres of those, which have no certain direction, nor any considerable length, but on the contrary are short and interwoven with one another in all directions. The same structure likewise obtains in the tendons, as appears from those of the slender kind; for example, that of the Plantaris, or Palamaris muscle, the expansion of which forms a membrane, resembling that which in the bladder, or stomach, is called nervous, and which ALBINUS has demonstrated to be of the nervous kind.

The sinuses of the Uterus in Comm. BOERH. tom. V. p. II. p. 47. & seq. were communicated, as well as several other observations,

vations, by persons of distinguished reputation. These, after other repeated experiments, which at that time were but few, I classed among the veins in some essays since published; and this opinion I have since confirmed by five or six late dissections of women who had died in child-bed. For they are continued with the veins, branched like them, and subdivided into smaller ramifications, and lastly evidently sheathed in that thin tender membrane which covers the veins. The cause of the inaccurate description formerly given of these sinuses, seems to be owing to their large size, their unequal and easily extended diameter, and the unaccountable largeness of their orifices opening into the cavity of the Uterus. By injecting the veins with wax, models are formed of these sinuses; but they are very irregular, as is usual in the veins; and here the more so the farther that the vessels recede from the natural state of the pregnant Uterus. Neither is that extraordinary dilatation observed to take place equally in all parts of the Uterus. But whether the

the sinuses which MALPIGHI has described in the Uterus of a cow are of the same kind with these, or rather whether they are true sinuses, I shall not yet take upon me to determine.

The laceration of the Vagina I attribute to the want of dexterity in the midwife, who, in order to extract the Fœtus, had forcibly thrust both her hands up the Vagina; for it could not be owing to the Fœtus alone in its passage, seeing every body knows how easily it makes the rest of its way, as soon as it has passed the internal orifice of the Uterus.

Most authors have alledged, that the orifice of the Uterus becomes thinner in the time of labour; but it is only to be understood in this sense, viz. the thick and annular portion of the Uterus which is produced into the Vagina, the larger that the opening of the orifice is, the more it resembles the part of the Uterus, and both the prominence of the Uterus into the Vagina, and the circumscribed circular furrow between the upper part of the Vagina and the circular production of the Uterus, disappear at the same time. These remarks

tween the fibres of the Uterus about the time of labour and those of the bladder. But that the delivery of the remains of the Placenta may be effected by these fibres is a point justly questioned; for it is very certain, that clots of extravasated blood, tho' they are loose and evidently less compact than the Placenta, are frequently confined in the womb, and condensed into fibrous masses, which sometimes at last adhere to the sides of the constricted Uterus; and I have often found the Chorion, several months after pregnancy, grown firmly to the Uterus. By what mechanism these fibres can expel the Placenta when it adheres to the Uterus, I cannot conceive; though I am far from denying, that when it floats loose in it, they may be capable of forcing it out, in the same manner as they do clots of extravasated blood.

OBSERVATION XXXIX.

Diseases of the Pelvis and Uterus ^p.

It may not be amiss to add here a description of some grievous and fatal diseases in the Uterus and neighbouring parts, which I have observed in dissecting of mor-

^p Ex progr. ad disp. NORTENII, 1749.

bid bodies. I shall not mention those of a more slight nature, e. g. a laceration of the orifice of the womb, which frequently enough occurs in women who have had children, as also fleshy, pendulous Papillæ, which I have often met with, full of Hydatids. Neither shall I dwell upon scirrhus indurations of the Uterus, which are frequent, especially in women of an advanced age. One however of this kind, as it was somewhat extraordinary, I shall beg leave to describe.

HISTORY I.

The body of a maid servant, who had been long ill, and died at last of an hæmorrhage of the Uterus, was brought to the theatre to be dissected, October 12, 1749. It seemed to be plump and sufficiently full of juices. In the Pelvis the Ovaria appeared to be scirrhus, and the Tubæ Fallopianæ were connected to them by a great quantity of a morbid cellular substance. Upon blowing into the Ureter, in order to prepare the Viscera of the Pelvis, I was surprized that the air did not penetrate the bladder, and on enquiring into the cause of such an

unusual Phenomenon, I discovered a very singular appearance of the parts. One half of the Pelvis was filled with a white hard, thick Scirrhus, which on the right side was grown all round the Ureter, as also to the Uterus, and the vessels which are sent to it.

But on the left it was still larger and glandular, and reaching behind the Iliac Vessels to the anterior hollow surface of the Os Ilium, downwards to the roots of the great sciatic nerve, it adhered to the Os Pubis, surrounding the orifice of the Ureter, and the arteries of the Uterus, which it was very difficult to separate from it: within it was purulent; and upon being laid open, it spewed out a great quantity of a red thick liquor, in the manner of an abscess. Through the middle of the Pus the Obturator nerve passed, apparently very sound. A tumour of the same kind was grown to the anterior part of the Aorta where it divides into the Iliacs.

Upon removing the parts of generation, it evidently appeared, that the Scirrhus on the left side adhered to the Vagina near its conjunction with the Ureter, and opened into its cavity with a large ulcer, which
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had eroded a great part of the Uterus; so that the Vagina was every where full of Pus, all the great vessels going to the Uterus and Vagina being entirely destroyed². A very singular cause of an hæmorrhage without doubt, very little known, and absolutely incurable.

After opening the Scirrhus in the right side, I easily discovered the cause of the air being repelled from the bladder, viz. the orifice of the Ureter was so contracted, as hardly to admit the slenderest silver-wire. Hence both the Ureter, the Pelvis itself, and the right kidney, were very large, exceedingly distended, and the kidney considerably inflamed. Here also, if I am not mistaken, was a no less rare cause of a retention of urine.

Upon revolving in my mind the history of this disease, I could not help suspecting, that it must have been owing to a venereal Bubo, of which the Pus, for want of an outlet externally, being retained and increased in its quantity had infected the neighbouring glands, which are both very numerous about the iliac vessels, descend with the hypogastric vessels into the Pelvis,

² Fascic. icon. anat. 11. tab. 6. fig. 1. ad e. c.

and likewise are frequent about the obturators. This example shews us, that even the large arteries may be dissolved by Pus, their cellular Lamellæ being gradually destroyed, till an orifice is made for the blood to escape.

HISTORY II.*

In the winter of the year 1751-2, there was brought to the theatre the body of a woman very much emaciated, with the Linea alba indurated and prominent, so as to appear like a cord. Upon opening the body, there were several morbid appearances. One of the Capsulæ renales was almost quite consumed, the remains of it forming only a small bunch of little glands. The Ureters were very large, especially the left. The iliac and lumbar glands were here and there scirrhus, as also the Ovaria and Uterus, the last of which was grown to the bladder, while the Tubæ Fallopianæ were bended towards the Rectum, in firm cohesion with the Peritoneum.

Upon searching into the cause of these morbid appearances, I found that part of the Uterus into which the vessels enter, not

* Ex progr. ad disp. clar. HAMMERSCHMIDT, 1753.

only scirrhus, but consumed by an ulcer, that had corroded almost every where into its cavity, which was full of greenish ulcerated Papillæ. By this ulcer and scirrhus the orifice of the Ureter had been so constricted, as hardly to transmit the urine into the bladder, and hence proceeded the extraordinary dilatation of the Ureter, while the erosion of the Uterus had occasioned frequent hæmorrhages from that part during the patient's life. Some of the urinary ducts were stuffed with a white, gritty, calculous substance.

HISTORY III.

Another woman, whose complaints were very much like the former, used frequently to consult me and the other physicians of the place; but I had no opportunity of opening her body. She was troubled with frequent hæmorrhages and discharges of Pus from the Uterus, and at last was carried off by a hectic fever, attended with the most excruciating and distressing symptoms.

HISTORY IV.

A violent disease of the same kind, but proceeding from a different cause, put an end to the life of a country girl, who had been got with child without being married. I was informed that she had been roughly handled by the midwife; and indeed it appeared too plainly to have been the case, by an ulcer so extraordinary, that if I had not seen it, I could scarcely have believed it; for it had consumed the lower part of the bladder next to the Vagina, together with the Vagina itself; the Uterus, and part of the Rectum: so that there was an open passage from the Vulva to the Pelvis. Even the Os sacrum was destroyed for the space of an inch.

OBSERVATION XL.

A vesicular appearance of the Placenta.

A vesicular Placenta may likewise be classed with the diseases of the Uterus, though I do not describe it here as a disease very uncommon, or not taken notice of before, being very well acquainted with
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that excellent book of VALISNERIUS upon this subject, wherein to his own curious observations he has added several others. Yet it is not so common a case as not to deserve our notice.

The Placenta at first sight had the appearance of grumous blood heaped upon a plate, was lamellated, of a reddish colour, and sent out innumerable stalks about an inch long, and more than half a line broad. To these stalks there adhered white vesicles, connected in such a manner, that the extremity of one stalk produced another vesicle, and so on, each stalk terminating at last in something like a vesicle. Wherefore this structure agrees entirely with that described by RUYSCH, wherever the vessels degenerate into vesicles. By this means from one vesicle depended several others, connected by divisions and subdivisions of stalks.

In the Placenta, which retained the form of a platter, the vesicles were reddish and more closely connected. Its internal structure was gelatinous, and so viscid, as not to be dissolved in water.

OBSERVATION XLI.

Various flighter diseases of the Uterus.

Another woman had a flat, broad fleshy tumour, adhering internally to the left side of the Uterus, and in it were contained a great many hydatids, of which there were likewise several within the Cranium. But this I know is a common enough case.

Likewise in another who had died in child-bed, the right side of the Uterus had a considerable number of sanious, subputrid tubercles adhering to it.

In a woman who drowned herself in despair, as also in two hydropic women, and in several others I found the Tubæ Fallopianæ imperforated. In one of them the extremity of the Tube was so round, as to resemble the Cæcum; yet it was not so close shut but a small bristle introduced by the orifice that opens into the Uterus could make its way through it. In another an hydatid, about the size of a pigeon's egg, adhered to the imperforated end of the Tube.

Hydatids

Hydatids of the womb are so very common, that I have seen several adhering to the Ovaria and Tubæ Fallopianæ in a child that was only six months old. May not these be the Ova, which some eminent men have described in the Ovaria of Fœtuses and young girls? For my part, I must own, I have never once met with an Ovum at that time of life.

The Uterus and Ovaria are so frequently found callous, that it seems rather to be the natural consequence of old age than a disease. It is somewhat more rare to meet with the genuine marks of the Corpora lutea, which are so evident in sheep and dogs. However, I have observed callous warts, full of coagulated matter, situated in the Ovarium, which were doubtless the remains of an old Corpus luteum inclining to a Scirrhus.

OBSERVATION XLII.

A Steatom of the Ovarium.*

I know that cases of this kind are not

* Philos. Trans. n. 472. Hamb. verm. bibliothec. tom. I.
P. 3.

very

very rare, though they are more often met with than could be wished in the human species; and yet that they are not common appears from the Philosophical transactions, where two instances are inserted by Drs. SAMSON and TYSON.

The body of a maid servant, about thirty years of age, who had died of a lingering disease, was brought to the theatre to be dissected, January 24, 1743.

Upon opening it, I immediately observed a large tumour in the Pelvis, which gave me hopes that she was pregnant; but these hopes were false, for upon examining I found the Uterus in its proper place, but contiguous to it in the upper part of the Pelvis, there were two tumours, separated from one another by a small intermediate cavity.

To this tumour adhered the right tube in such a manner, that almost one half of the membrane that constitutes the tube, was incorporated as it were with the coat of the tumour. The tube was imperforated. Farther, to this tumour, and afterwards to the Uterus the Omentum adhered by two processes, according to an ancient

observation of HIPPOCRATES. There were likewise hydatids adhering here and there to the coat of the morbid sac. In the left side there was nothing preternatural to be observed.

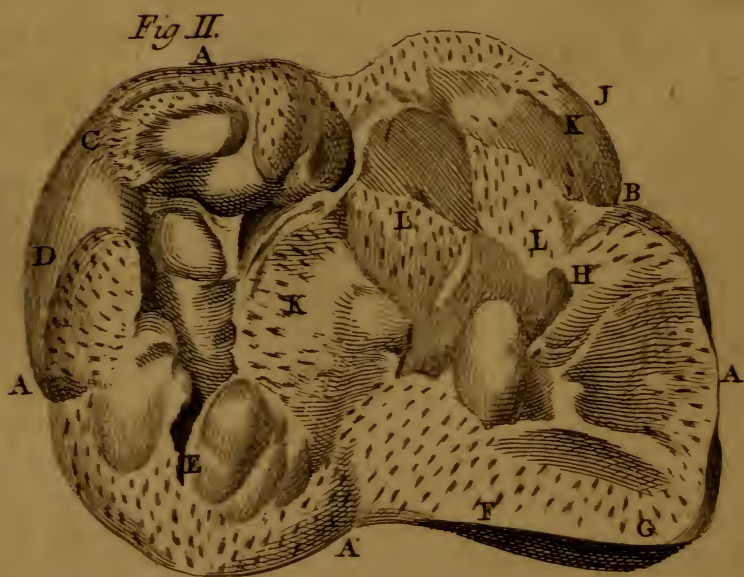
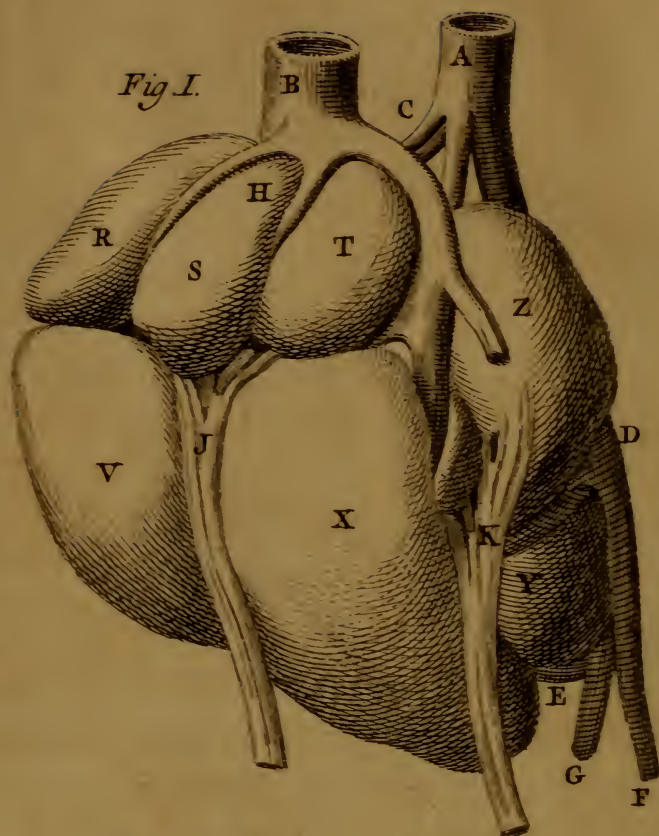
I say nothing of the dimensions, these being expressed in the plate¹. The coat of the tumour, which I easily discovered to be the Ovarium, was almost a line thick. It was every where hollow, and divided by a kind of partition into two bags, in the lesser of which was contained a matter like honey, and likewise a substance resembling fat, in which last there was a great number of brown curled hairs, like the human, about two inches long. Looking upon this as the very same with the meliceris of the antients, I held it to the flame, which it caught immediately, and blazed in the manner of fat.

In the larger bag there was a purulent matter of a different kind resembling milk, in which there floated brown, friable lumps, like pieces of the lungs.

¹ They were all much larger than in the print, but the original plate remaining in London, I cannot correct that fault, and therefore I have added a scale.

It seems not difficult to conceive two morbid Ova or vesicles to have been swelled in this woman, and by degrees to have occupied the whole cavity of the Ovarium, obliterating the others, which were incapable of resisting them. It is harder to account for the quantity of fat there accumulated, which taken all together would have amounted to no less than an ounce; whereas in a sound Ovarium there is not the least grain of real fat to be discovered. Hence it appears, that wherever the cellular membrane is, fat may be deposited; though it commonly is not. Thus I have seen fat both in the Scrotum and Penis, and I have known it found in that delicate cellular membrane which lies between the Tunica choroides and sclerotica of the eye.

Farther, it may be enquired, how hairs can possibly grow, without either skin or membrane to take root in? However there are hairs, which though they perforate the skin, are really rooted in the fat, as is evident both in the Scrotum and Pubes. But it is still more difficult to explain, how in a part remote from the Epidermis, these morbid hairs should put on such a horny and pellucid appearance? And does not
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this contradict the common opinion, viz. that the outer coat of the hair is borrowed from the cuticle, and demonstrate, that it is a continuation of the bulb from which the hair arises? For it does not appear that these hairs had ever belonged to a Fœtus that was there consumed, though I know it was the case in other instances, especially in that related by TYSON; for there, together with the hair, there were teeth found in the Ovarium. But here were no remains of the more solid parts of the body, and it is by no means probable, that the hairs should have escaped that force, which destroyed the bones and teeth, whose texture is evidently harder than that of the others.

TAB. II. *The explanation of the figures.*

FIGURE I.

- A. The Aorta above the Pelvis.
- B. The Vena cava.
- C. The left Psoas muscle.
- D. The Omentum.
- E. Its adhesion to the Uterus.
- F. Its adhesion to the morbid Ovarium.
- G.

- G. The Uterus.
- H. The Rectum.
- I. The left Fallopian tube.
- K. The left Ovarium.
- L. The right Fallopian Tube.
- M. Its Fimbriæ.
- N. The ligament of the right Ovarium.
- O. The morbid Ovarium.
- P. The inferior larger bag.
- Q. The lesser bag.
- R. Hydatids adhering to the external surface.

FIGURE II.

- A. The morbid bag represented separately.
- B. The larger bag opened.
- C. The morbid thickness of the membrane of the Ovarium.
- D. Some remains of the purulent matter, after the greater part had run off.
- E. The smaller bag, containing the melicerous fat and hairs.
- F. The Septum separating the bags.
- G. Hydatids.

The whole tumour together with the Uterus I have preserved in the anatomical Musæum of the university.

OBSER-

OBSERVATION XLIII.

The nature of an inflammation.

In a lying-in woman, who seemed to have died of an Erysipelas of the thigh, I thought I first evidently discovered the nature of an inflammation, and I have observed the same in several other dead bodies since. The intestines were remarkably distended with wind, and all over inflamed, not that the vessels were only distended with blood, but that the extravasation into the cellular membrane according to the whole length of the vascular ramifications, occasioned a reddish line around the vessels. This extravasation is often imitated by injection, especially when a thick injected liquor is pushed with difficulty through the resisting vessels. For then the colourless tallow exsudes every where thro' the coats of the artery, and thus forms a tallowy crust around it.

Somewhat different from these are other extravasations, where the extravasated fluid runs into broad blotches. Such I had occasion to see in a living person, who was ill of a fatal mi-
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liary fever. Afterwards in a young man, who died of a very bad fever, in which he was comatous, light-headed, and complained of a burning heat within. Upon opening the body, I found the liver and spleen found, but the intestines, and especially the Colon, were distended with wind. In them there were a great many mortified spots, of a blackish purple colour, and some likewise in the mesentery, stomach, and gall-bladder. Upon opening the stomach I observed several signs of that kind of inflammation, where the blood is extravasated into the outer cellular membrane. The body continued warm for twenty-four hours after he died, though it was in the middle of a very cold winter. I saw a like extravasation, spread broad upon the external coat of the Aorta of a man, which appeared like a sugillation immediately above the heart.

Simple inflammations, in which the vessels are turgid with too great a quantity of blood, happen frequently in the eyes, and are owing not to an extravasation of the globules, but to their being propelled in greater quantity into the vessels which carry

ry the red blood, which as they only transmit the single globules, are therefore pellucid. But though these are of the greatest moment, I shall not insist any longer upon them here, seeing that I intend to explain them more fully in my large system of Physiology.

OBSERVATION XLIV.

The History of the variolous temperament of the year 1735^a.

Dr. SYDENHAM has enriched physic every where by his writings, but no where more than in his observations on the Small-pox. What numbers have been sacrificed to a pernicious theory, viz. a hot regimen and sudorifics, it is the business of every physician to conceal, lest the very name of that science, so beneficial to health, should be brought into disgrace. He boldly administered acids, anodynes and glysters, but was so afraid of the black spots intermixed with the pustules, that he left the patient to his fate, whenever that appeared. Allow me however to offer a re-

^a Ex Comm. lit. Noric. 1736. p. 73.

medy for this epidemical temperament which I now describe.

For several years the Small-pox had suspended its rage, appearing but seldom, and for the most part very mild. In the beginning of the year 1735, the season was so moist and rainy, and a northerly wind so constant, that it thundred only once or twice during the summer, which is very rare in this country, and there were several inundations.

Does not this confirm the opinion of HOFFMAN, viz. that cold and moist seasons are the cause of epidemical diseases? And are not malignant diseases very much owing to an obstruction of the perspiration? In the month of March the distinct Small-pox appeared, and they were very mild, as they commonly are in this country. The number of patients gradually increased, and in May, June, and August the disease became so frequent, that very few who had not suffered it before escaped. In the month of September it began to decline, and gradually gave way to a miliary fever. In the summer months the confluent kind was frequent; very often after the eruption

eruption there succeeded black spots, and miliary ones in adults. Hence the mortality became very great, and the few who got over the disease, escaped with great difficulty, after tedious sufferings. As I attentively considered every circumstance about the patients, I observed that those suffered the most, and for the greatest length of time, who had increased the disease by the too free use of the *Confectio de Hyacintho*, and a hot regimen. In the confluent Small-pox, about the fourth or fifth day of the disease, and therefore about the second or third of the eruption, the black spots appeared, very numerous, flat, about two lines broad, of a bluish black colour; and several of them blacker than ink. These were preceded by excessive pains of the back, pleuretic stitches, and a spitting of blood; which symptoms were succeeded by a Delirium, a violent cough, and on the 8th or 9th day a fatal falling of the pustules. Observing this symptom to be very much dreaded by the other physicians, and having seen it prove fatal to a young lady of exquisite beauty, I racked my invention to find out a remedy for it. Acids and refrigerants I looked

upon as doubtful remedies, on account of the pustules being easily repelled. Some physicians prescribed emulsions, glysters, and purges, and persisted boldly in the use of them. But the consequences of this method were palsies, loss of speech, dropsies, or sudden death by the falling of the pustules. A hot regimen proved certainly fatal. The humours were exalted to the highest pitch of alcalescence, and hence both the smell of the pustules, and the breath of the patient, was extremely noisome. There was a mortal corruption of the humours, as was indicated by the spots, which were nothing else than small mortifications, as likewise by the excessive pains of the loins, and the small quantity and green colour of the urine. The fear of a fatal event was increased by the unfavourable prognostic of Dr. SYDENHAM in such cases. What I endeavoured to discover was a medicine capable of resolving the coagulated particles of the blood, without breaking the vessels, or promoting perspiration, without encreasing the fever, and of preventing the falling of the pustules, without increasing the alcalescent disposition of the humours. And I was

lucky enough to find out a medicine sufficient for these purposes, i. e. one capable of propelling the morbid matter into the pustules by a gentle kind of inflammation, and of resolving the coagulated particles, without raising any extraordinary commotion in the body. This medicine was Camphire, very justly commended by TRALLES, though only from theory, and not in the case of the Small-pox. Indeed I did not learn those virtues of that excellent resin of him, for at that time I had not seen his treatise upon it, nor indeed does he ascribe those virtues to it, but I learnt them of nature, and reduced them to practice. Wherefore, as often as the symptoms threatening a dangerous kind of Small-pox occurred, viz. a delirium the first day, a violent fever, a darting pain of the loins or breast, and a difficulty of breathing, especially in adults full of blood, I immediately ordered a decoction of aperients, as Sarsaparilla, Grass-roots, Maiden-hair, Daisies, and Figs, to be drank plentifully, to the quantity of some pints every day: for in this stage of the disease bleeding was not proper. Vomiting, which was almost

a constant symptom, I promoted by an emetic so strong as to operate seven or eight times; for a suppression of the vomiting proved fatal to the patient. As to hæmorrhages, I was so far from dreading them, that I rejoiced to see them. In a boy seven years of age, I saw before the eruption a very plentiful discharge of blood by stool, which was followed by the most favourable kind of Small-pox. Whenever, by the officiousness of friends or acquaintances, hot medicines were administered, either very black spots suddenly broke out after violent sickness; or tho' the eruption appeared as usual on the third day, and the symptoms became milder, yet they subsided the sixth day, and were attended with black spots, as is usual in the malignant kind of confluent Small-pox. Whenever I observed the patient oppressed with any of these symptoms, I prescribed Camphire to the quantity of a scruple in twenty-four hours, to be given in an emulsion. As in almost all fevers the paroxysm returns in the night-time: to allay this I ordered the syrup of white poppies. Wherefore from midnight till noon I ordered the Camphire
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to be taken at the distance of every two hours, and at three or four o'clock in the afternoon, or at the latest, before six, the syrup of white poppies with nitre and the fresh juice of lemons. The quantity of syrup I ordered for a grown person when the disease was very violent, was an ounce and a half, with six drachms of the juice of lemons; for I found that by this quantity the delirium was at last suppressed. This method, together with the use of diluents, I continued till the pustules became dry. For on the ninth day the confluent Small-pox began to ooze forth a yellow viscid matter, the spitting which is frequent in grown persons abates, the throat becomes dry, and the swallowing, in consequence of that, very difficult, and about the tenth or eleventh day the pustules became hardened into black crusts. At this time the spitting is to be promoted, and thereby a fatal quincy prevented. For this purpose a gargerism made with honey of roses and nitre is to be injected into the throat by means of a syringe, which method is likewise of great service in quinacies, though HOFFMAN disapproves of it. Acids and moisteners

moisteners are to be plentifully administered, the quantity of Camphire diminished, and totally left off after the ninth day, seeing by that time there is nothing left to be expelled, and the attack of the secondary fever is threatened. By the method above described, the black pustules usually disappeared about the eighth day, and after growing first red gradually became pale. In this stage of the disease it is likewise necessary that the body be kept open; and this is to be done by glysters with nitre. By these means the secondary fever appearing about the eleventh or twelfth day was commonly mild, which otherwise used to be very violent and often fatal, being attended with a return of the delirium, an oppression at the breast, a quincy, a soft, unequal quick pulse, and an extreme putrid smell of the whole body. When the fever was very violent, it yielded to a purge made with tamarinds, which I did not scruple to prescribe even when the patient was very weak, and repeated it on the twelfth and thirteenth days of the disease. By this method that dreadful disease was subdued, so that the patient required no farther

farther assistance, neither from the syrup of poppies, the juice of lemons, nor any other medicine. I forbid moistening the crusts which now began to scale off, lest the foetid smell should thereby be increased and protracted. In some, instead of the secondary fever, a white miliary rash appeared, which was commonly no ways dangerous. In others the Small-pox did not dry into crusts, but gradually disappeared, and without any bad consequences, when it happened in this stage of the disease. I forbid the patient the use of flesh for near a month, and purged off the remains of the disease by gentle physic, and afterwards ordered him to drink Aqua Fabaria mixed with milk. By this means these troublesome consequences which very often succeed the Small-pox, were almost certainly prevented, viz. ulcers, inflammations of the eyes, weakness of the joints, loosenesses, and tedious diseases of the lungs. The diet through the whole progress of the disease was composed of apples and other vegetables, without allowing even broth in which meat had been boiled; the drink was always the same, and the more they drank, the better.

But

But it may not be amiss to give the description of a case, the violence of which will shew the efficacy of the above method. A young lady of a noble family, about nine years of age, of a weak constitution, long subject to obstinate complaints of the breast, upon which account she was kept in the country, on the seventh day of August was seized with a gentle fever and an inclination to vomit. On the second day of the disease, she complained of darting pains of her back and loins. Her relations imputing this disorder to eating too heartily of ripe fruit, gave her confection of hyacinth. On the third day, the vomiting was continual, and could hardly be restrained by the stomachic essence, a very hot medicine, and the abovementioned confection, which remedies alone might have proved fatal. On the fourth day, all the symptoms grew worse, the cough was very violent, with an incessant pain of the back. At last, on the fifth day, which was the first time I visited her, the Small-pox appeared, and I ordered the eruption to be promoted by lying a-bed and a plentiful use of diluting liquors. The eruption, which usually happens on the third day,

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in this case was retarded till the fifth, by means of the hot things administered, which shews the eminent skilfulness of those dablers in physic, whose knowledge reaches no farther than Pulvis Pannonicus and confections. But that night a great number of black spots appeared, both on the face, limbs, and breast, and on the lips they were quite as black as ink. In the mean while the pustules were flat, pale, and confluent, the cough violent, and a great oppression at the breast, attended with a delirium, which returned constantly till the fifteenth day, from five o'clock in the afternoon, till ten next morning. Thus it appears that the symptoms were very violent. Upon visiting her the sixth day, I found a starting of the tendons on feeling her pulse, her urine was milky, she sneezed frequently, and the symptoms were encreased. Wherefore I ordered for her Camphire, in an emulsion made with almonds, and the juice of lemons added to it, so as she took ten grains of Camphire in four and twenty hours. By this means a breathing sweat was produced, and the Small-pox became larger, but nevertheless
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that night the delirium was increased to such a degree, that she could not be kept in bed. However, on the seventh day the pustules became more red and full, the urine was of a greenish colour, almost like sea-water, but at night the delirium returned very violent. On the eighth day she was blind, and very low-spirited, but the urine was first of a lemon colour, and afterwarde redish, and the pustules, as is usual in the confluent Small-pox, flat. I ordered the Camphire to be repeated, and at night half an ounce of the syrúp of poppies, with two drachms and a half of the juice of lemons. On the ninth day the pustules began to dry, and the disease had a favourable appearance. To the evening opiate draught I ordered the phlegm of sulphur to be added, for fear of the putrefaction and the secondary fever. The last spot to be observed on the lip now disappeared, the others after becoming gradually pale, after the seventh or eighth day were no more to be seen. As she had been constive for some time, a suppository was administered, which produced a yellow stool. Some of the pustules on the face began to
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grow black. On the tenth day, after the plentiful use of acids they grew yellow, her appetite in some measure returned, but she was very weak. She was a little better on the eleventh day, had a suppository given her, all fear of a quincy was gone, nor did there remain any salivation. On the twelfth day, all the pustules were covered with a hard black crust, her pulse was weak, she was light-headed, very restless, and the secondary fever was come on. She had a glyster administered, which operated three times, and seemed to give her a good deal of relief; but in the night all the symptoms grew worse. There was no indication for Camphire now, on account of the dryness of the pustules; wherefore I encreased the dose of the Syrup of poppies to five drachms and the juice of lemons to three. On the thirteenth all the symptoms grew worse, she was excessively low and weak, and at times light-headed; wherefore the stomach and intestines were to be relieved, by expelling the fæces which had been long hardened. After taking an infusion of two drachms of Senna, and half an ounce of the pulp of Tamarinds, she had two stools, which were very black: in
the

the evening the dose of the syrup of poppies was increased; but the delirium returned, and the urine of a bluish cast. On the fourteenth day, the black crusts began to grow white about the edges; her pulse was better, her eyes opened, and more certain hopes of a recovery. On the fifteenth day, I purged her again with two drachms and a half of Senna, and six drachms of the pulp of Tamarinds, by which she had three stools; the pustules fell off in large scales, and now for the first time she was quite sensible. Thus the disease went off, but there remained a dry cough, which by the use of warm Aqua fabaria and milk was removed. Her face was very little pitted, and she enjoyed a firmer state of health than she had before the disease.

As to the miliary fever which appeared after the Small-pox, I shall not insist much upon it; for it was no ways dangerous. The disease was very gentle the first day, and on the second large red spots appeared upon the skin. It seized equally those who had not had the Small-pox, as those who had got over them. On the third day, very small transparent, white pustules, began to arise gradually in the spots, the circumference

ference of which was pale; but by a moderate perspiration, and a diet drink, without any other assistance from physic, all these disappeared on the seventh day, and were succeeded by broad dry scales, on the face, back, hands, and even in the mouth and tongue.

But the disease was very deceitful, and when it appeared to be going off, returned again with greater violence than before. For after giving a purge, a kind of strangury was brought on, and the urine was of a blackish red colour, with a dark brown sediment; there was an universal swelling all over the body, attended with pain and a gentle fever, which soon terminated in death. HAMILTON in this case advises cooling medicines. Aloes and Jalap in whatever shape administered, increased the spasm of the vessels, and had no effect in promoting the excretion of urine. But it was of service to purge the patient twice at least with the solution of Manna, to make him drink plentifully of a gentle diuretic decoction, made with parsley roots, fluellin and the like; to season the broth with Selter salt, that of wormwood and the Panacea tartarea, and make him lick Rob of
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elder every now and then. By these means the swelling daily went off, together with the unfavourable colour of the urine, till at last, the urine being voided very thick and plentifully, in four or five days the patient recovered. Could the internal viscera be affected in a similar manner with the spasm? or rather was there not an imperfect crisis by the pustules, and the acrid matter being resorbed, and carried to the kidneys, by its stimulus constricted the urinary vessels?

But the variolous pustules dig pits in the skin, so that the turgid arteries discharge a tinged fluid through the orifices of the small cutaneous vessels into the bottoms of these pits; and I have seen the pus of so inflammable a nature as to burn very briskly. But I never met with pustules in a dead body beyond the pharynx, in the stomach, intestines, or any of the other viscera. The firm epidermis, to confine the pus, seems necessary in order to the formation of the pustules. But the intestines are usually so much affected, as being softened, and in a manner macerated in the pus, they are very easily tore, even by injection alone.

OBSERVATION XLV.

Glandular Tumours.

Scirrhus tumours of the conglobate glands are surprisingly frequent at Gottingen, and it is usual for the whole series of these glands to be so affected, viz. in the Mesentery, along the Aorta, and internal iliacs, in the Pelvis, Thorax, Aspera arteria and neck. In the body of a boy about six years of age I saw the inguinal and iliac glands so large, that I mistook the swelling at first for a rupture; for the situation was the same, and they were very large both above and below the groin, no less than two or three inches in length. The Thymus likewise frequently swells at the same time, and becomes scirrhus; so that from this circumstance, together with the milk which it contains in common with these glands, it may not improperly be classed with them.

OBSERVATION XLVI.

A præternatural Cellular Membrane.

The cellular membrane which I now speak of, connects the viscera and other parts of the human body præternaturally. For the most part it is composed of slender Processes. There is nothing more common, than to see the liver connected to the peritonæum, the colon, the duodenum, the stomach, the diaphragm, and peritonæum, the uterus to the Tuba Fallopiana, this last to the Rectum, the gall-bladder to the peritonæum, or the Omentum, and this to the peritonæum, the lungs to the pericardium, this to the pleura, or heart, viz. either to its whole surface or some part of it.

I have seen broad yellow transparent membranes produced from the Omentum, connecting it here and there with the internal surface of the peritonæum. There were no vessels to be observed in these processes. The lungs are very often connected to the pleura by broad membranes of the same kind.

In

In a woman there was found a large thick point of a thorn under the skin, which was quite whole and found, fixed in the sheath of one of the tendons of the abductor muscles of the thumb, wrapt in a great deal of the same kind of cellular membrane, as above described. From this instance it appears, that these sheaths may be perforated without pain or any troublesome symptom, and likewise, that wherever there has been an inflammation, a viscid juice is concreted into cellular Lamellæ.

OBSERVATION XLVII.

The matter of diseased bones *.

There is nothing more frequent than to meet with parts of the human body indurated, though this most often occurs in old persons, as every body knows. I shall here omit mentioning numberless instances which I have met with in my anatomical college, and for brevity's sake, I shall take no notice of those calculous concretions which I have found so often in the valves of the aorta, in those of the veins, and between

* Progr. ad disp. clar. WALBAUMII, 1749.

the bony scales in the small ulcers of the arteries, as also at the origins of the branches going out from the aorta, and lastly, in little cysts of the thyroid and several others of the conglobate glands. I shall likewise pass over in silence another kind of induration, arising from a callous conglutination of the Lamellæ of the cellular membrane, which so often give firm callous coats to cystic tumours in the neck, and elsewhere. In short, I shall say nothing of these bony substances, or at least having that resemblance which I have seen in the cavities of strumous glands. The only kind of induration which I shall here treat of, is that which happens in the arteries, and which I am sensible is commonly enough known in some measure, but I suspect there is something relating to it which had not hitherto been taken proper notice of ^v.

That the arteries ossify in aged persons, is a thing known to every body. There is nothing more frequent than bony scales

^v CHESELDEN, in the Introduction to his large Osteography, mentions a bony fluid which is frequently deposited in the arteries, membranes, and in the heart itself, but as to the origin of it, he is quite silent.

in the internal surface of the aorta, both in its great curvature, and in its course through the thorax and abdomen. I have likewise seen the same kind of bony scales both in the carotid and vertebral arteries, in the Dura and Pia mater of the brain, in the arteries of the Pelvis, the crural, and those of the feet, and lastly, in the veins of the penis and pelvis. It is not usual for large portions of the arteries to harden and ossify: they are commonly small bony Lamellæ, covered with a soft membrane, smooth on the insides towards the cavity of the artery, and made hollow by the motion of the blood through the vessels; the muscular and transverse fibres of the arteries adhering to them externally and marking them with little furrows. Between these scales it is usual to find ulcers in the arteries^z, from the internal membrane being broke and as it were eroded. These ulcers are less frequently met with in those parts where the impetus of the blood against the coats of the arteries is less vio-

^z As in that aged body, of which I gave a description in the *Philos. Trans.* n. 488. Compare the treatise of Dr. BERNARD WINKLER anatomist at Moscow *De lithiasi Corp. Human.* p. 10.

lent. Thus in the hypogastric arteries I have often seen bony scales without any ulcer.

My celebrated master, the great Dr. BOERHAAVE, whose pupils are dispersed all over Europe, compared this morbid ossification in old persons with the natural generation of bones, maintaining that it was only a continuation of this last; and that the same causes being continued, by the same force of the blood, the membranous fibres became more and more rigid, the vessels were obliterated ^a, and at last degenerated into a bony structure, in the same manner as in a fœtus the Lamellæ of the Periosteum naturally ossify. This opinion, from that deference usually paid to men of extraordinary parts, has been almost universally received by physicians.

The eminent Dr. AUGUSTINE BUDE ^b, so far corrected the abovementioned hypothesis, as to deny that the soft fibres degenerated into a bony nature, and to affirm that these morbid productions were not real bones; for he had neither observed a

^a J. R. M. n. 467. &c. A. de cognos. et curand. morb. n. 55, &c.

^b Miscellan. Berolin, cent. IV. S. tom. V. p. 63. seq.

bony structure in them, nor other properties peculiar to bones. But he supposed certain earthy and cretaceous particles, which according to his description, are of the same kind with those which I have observed to be collected.

Some years after I had discovered those bony Lamellæ to be so frequent, I at last observed in the aorta of a man callous and yellowish tubercles, which were prominent towards the cavity of the artery. As yet the internal membrane of the vessel was entire and covered them; and upon opening them I found a yellow kind of fluid collected in the cellular membranes between the muscular fibres and the internal coat. It was soft, of a pappy consistence, and not unlike that which is found in the atheroma. In the same body there were found other yellow callous tubercles resembling the former, but drier, and tough as skin, others of a cartilaginous consistence; and lastly, others bony, making a noise when struck with the knife. Thus I saw a kind of natural progression of those ossifications, the beginning of which was the fluid abovementioned, which went through different degrees of hardness, till it terminated

nated in what is called a bony substance, although it has neither parallel fibres nor pores, and is usually of a harder consistence than bone. I have had occasion to repeat this so often, in such a variety of bodies, that I am fully convinced of the reality of the thing itself, and of the corollary which I have drawn from it.

Thus it appears that these bones are generated not from fibres become rigid or consolidated, but from an extravasated fluid, and hence arises a new objection against the doctrine of FRANCIS DU HAMEL^c, who ascribes the generation of the bones in general to the induration of membranes, rejecting any such thing as an osseous juice. By the same reason this morbid degeneration of the arteries in old age may be concluded to proceed rather from some fault in the humours, than from the solids becoming rigid; whether the proportion of earth in the blood is increased, which is very probable, or the motion of the heart being now retarded, these earthly particles stick by the way, which when the circulation was more brisk, were sent off by the kidneys. This hypothesis seems to be con-

^c In the Memoires de l'Acad. Royale des Sciences. 1743.
firmed

firmed by the following circumstances, viz. it is certain that these bony scales are generated where there is hardly any friction, or any consolidating pulsation of the arteries, as in the Dura mater, which has frequently large scales between its two bony Lamellæ, and likewise in that soft and tender membrane the Pia mater, as also in the Omentum.

OBSERVATION XLVIII.

Callosities of the Pleura^d.

It is no uncommon case to meet with cartilaginous indurations, and even ossifications, of several of the membranes of the human body ; but a callosity of the Pleura less frequently occurs, tho' I have seen it several times. But the most remarkable instance of this I observed in the body of a thief, who was hanged in the beginning of the year 1753, where besides several scirrhus glands scattered here and there, I found a tough callous membrane as large as one's hand, covering the posterior part of the ribs internally. It was neither a bone,

^d Progr. ad disp. clar. SPROEGELII professor at Berlin, 1753.

nor a yellow fluid substance, but a callus, such as is sometimes found in the arteries, expanded, broad, and waving, very much resembling those species of agaric which creep round the outer surface of old timber.

OBSERVATION XLIX.

Bones produced in the Brain.*

The Dura mater of the brain frequently ossifies, and we find in it large Lamellæ, very much resembling true bone, ragged, and terminating in parallel fibres like a comb, every where covered with a thin membrane. A large one of this kind, of a rhomboidal figure, I saw in the falx of a printer who was not very old. In another man of an advanced age, who had lost a part of the Os frontis, and a bloody Ecchymosis appeared in the skin where the bone was deficient, tho' the brain was quite sound, there were large bony Lamellæ here and there on the external surface of the Dura mater, covered by the two membranes of which it is composed, so evidently produced from a fluid, that they retained the im-

* Ex Progr. ad disp. clar. SPROEGELII, 1753.

pressions of the fibres of the membranes. In the same man, which indeed is no very rare case, the falx being destroyed, the right hemisphere, as it is called, of the brain coalesced with the left. In the Plexus choroides, at the beginning of the descending winding extremity of the anterior ventricle, there was an oval scirrhus resembling a pearl, covered with the vascular Pia mater, white, hard, and almost as large as a filberd. In the same person, the pericardium adhered every where very firmly to the heart. It would appear as if all his vessels had abounded with a coagulable juice. Lastly, in the Pia mater, there were several thin bony Lamellæ to be observed, which is frequently enough the case.

OBSERVATION L.

The cellular membrane hardened^f.

I have likewise seen the cellular membrane hardened in such a manner, that the leg being pulled up to the trunk of the body, it remained fixed in that bended position. Upon examining eagerly into the

^f Ex progr. ad disq. clar. SPROEGELII.

cause of this phenomenon, I could discover nothing besides a hard and almost tendinous state of the whole cellular substance. In a woman, who was very old, there was such a remarkable hardness in the whole body, both in the membranes, cellular substance, and nerves, that the most superficial observer could not help taking notice of it. The abdomen seemed to be divided by three tendinous cords, composed of the Linea alba, and semilunaris, which, though not quite bony, were very hard and elastic. I met with the same appearance on another old woman. The arteries were here and there cartilaginous. The small artery which goes from the coronary, and that which is sent from the mammary, and accompanies the phrenic nerve, was perfectly degenerated into a bony tube. And in the same subject the crooked artery at the side of the Sella equina was bony and greatly dilated; the arteries of the Uterus were likewise ossified, as also the radial arteries, and the Tibials as far as the feet.

OBSERVATION LI.

An Induration of the Aorta^g.

In another woman seventy-six years of age the great curvature of the Aorta had several large bony scales upon it, and its diameter was larger than usual, as is commonly the case in the bodies of old persons. In the pulmonary artery there was a callosity which began to spread towards the orifice, above each of the valves, and there appeared prominent. The coronary arteries had here and there callosities, and small ossifications and scales so as to be converted in a manner into bony tubes, but lined internally with their own proper membrane. In one of the valves of the Aorta, there were gravelly, sandy, ossified scales, composed of little round particles inclosed in a double membrane; but the upper margin of the Aorta, at the extremity of the valves was callous, which indeed is no rare case. This callous margin shews, that these valves by no means shut the orifice of the coronary arteries; for

^g Progr. ad disp. clar. SPROEGELII.

the callosity took place where the current of the blood rubs the strong margin of the valve against the membranes of the Aorta. But the orifices of the Coronary arteries were above that callosity. In the Valvula mitralis there was a broad, callous, yellow, firm tubercle, not yet perfectly ossified, evidently produced by that fluid which I mentioned before, and covered with a membrane. The substance of the heart was harder than usual. In the same body likewise I was surprised to see the articulation of the lower jaw with the temporal bone on one side deprived of its cartilaginous crust, and almost one half of the loose cartilage destroyed and perforated. The crust, which attrition had destroyed, was by the same cause converted into almost twenty round, half ossified globules, loose in the cavity of the capsula. In the other side every thing had a sound appearance.

In the year 1744, in a woman not very old, I found not only the membranes hardened, but the fat itself hardened almost like a stone; viz. between the Tibia and teguments, there were several hard, lenticular bodies, which, but for their melting

in the fire, you would have mistaken for stones. But when put into the fire they burnt away almost entirely.

OBSERVATION LIII.

A Stone in the Heart^h.

But now I come to give you the history of a very singular disease, which lately proved fatal to a very hopeful young gentleman. His mother, as I was informed by the family physician, was subject to palpitations of the heart, and about eight years before was seized with the same disease which proved fatal to her son, who at that time was in the fifteenth year of his age. I was not called in till the day on which he died, and at that time there was no pulse to be felt in the wrist, but a violent throbbing in the carotid arteries. He was all over in a cold sweat; and I left him, after declaring my opinion that he was dying. Soon after he expired, his body was opened. We found the Pericardium firmly adhering to the heart, and

^h Progr. ad disp. clar. SPROEGELII, 1753.

here and there the lungs to the Pleura, and up and down the whole surface of the Pericardium there were white scirrhous tubercles, some of them hard, and some of them full of a white matter like pus. By means of these the heart and Pericardium were inseparably united. The lower part of the left ventricle, which was half petrified, was glewed to the Pericardium by means of a tophaceous substance. The sinuses between the two membranes of the valves of the Aorta were callous and almost stony. In the valves of the Aorta, between the membranes, there was a collection of sand, but the tendons which support them, were soft, and here and there had little bony scales in them. But the chief disorder lay in the valves of the pulmonary vein. They were very hard and solid, and so full of a calculous matter, that the knife gritted against them. The pulmonary sinus was likewise composed of a kind of petrified flesh. Neither the heart, nor the large blood-vessels, exceeded the natural size. This case was the more extraordinary as the age of the patient was no more than

than twenty years. The heart could neither be sufficiently shut, nor opened, in this youth, so that it was deprived of its natural alternate rest, without which even this viscus cannot long subsist. For the left ventricle both received the blood very difficultly from the sinus of that side, and during its contraction pushed it back into the same sinus by the ossified *Valvulæ mitrales* remaining open. In the same manner the blood recoiled back into the heart from the Aorta, by means of the rigidity of the valves of that artery. Hence, as the heart was perpetually stimulated, there was a constant palpitation of it; and as it could not send a sufficient quantity of blood to the brain, a profound sleep was occasioned, such as is the consequence of a great loss of blood, whether by opening a vein, or wounds.

OBSE RVATI ON LIII.

A bone in the form of a cup found in the eyeⁱ.

In the body of a malefactor which I dissected in 1752, I met with a disease, not

ⁱ Progr. ad disp. clar SPROEGELII.

so terrible as it was extraordinary in its nature. For as I was carefully dissecting the nerves of the eye, it appeared that he had been blind of that side, and that there was a cicatrix in the Cornea, and a hardness in the eye itself. A farther dissection discovered a surprising cause of the disease; for under the Choroid membrane, instead of the Retina, there was a bony, or rather a stony Lamella (for I could not observe any bony fibres) to which the choroid coat adhered, as it usually does to the Retina, concentrical, and resembling a hollow hemisphere, excepting that it was double, and on one side appeared as if it consisted of two cups. It was perforated with a round hole, through which the optic nerve passed, which gave it still more the appearance of the Retina indurated. Within this bony cavity I found no genuine vitreous humour, but a kind of nerve as it were, viz. a white cylinder, which passing by the above Foramen through the whole diameter of the bony hemisphere, at last was attached to a confused bony substance, which might be considered as the degenerate chrySTALLINE lens. To that body the Iris, and the Processus

cessus ciliares were every where attached, as likewise the Cornea, to which last the Iris was also glewed : now, whether it was the Retina, as I am fully convinced it was, or whatever else you please, that was changed into that hollow bony hemisphere, it is plain that there was a perfect induration formed in one of the tenderest parts of the human body, viz. the eye; and therefore there is no part in the body that is not capable of being indurated. I have read of small stones being found in the crystalline lens, but I don't know if another instance has been met with, similar to the case which I have here related.

OBSERVATION LIV.

The bones softened^k.

As there are preternatural indurations of the soft parts of the body, several instances of which I have given above, so likewise the hard parts are sometimes preternaturally softened, as has been observed in several places, and of late, especially at Paris, in a woman named Soupiot, whose

^k Progr. ad disp. clar. SPROEGELII.

bones from their natural hardness were reduced to a morbid softness. Although the following instance which I saw is not so remarkable as that of Soupiot, yet it may be allowed to bear some affinity to it. It was a leg that was brought to me that had been amputated on account of a caries. The Periosteum of the Fibula was entire, and quite sound, but under it the bone had degenerated into a fleshy, or soft cartilaginous substance, and could be cut almost as easy as cheese; it was likewise swelled, and within eroded by a foetid ulcer. There appears to be something in this observation, which contradicts the opinion of the celebrated DU HAMEL, who looks upon a bone to be only the Periosteum changed and hardened. For if the bone and Periosteum were of the same nature, the same cause which produced so great change in the bone, ought likewise to have had an effect on the Periosteum. Thus likewise Madderinges the bones red, but has not the least effect of that kind on the Periosteum, which it must do, if this last was of the same structure with the bones,

OBSERVATION LV.

A Fœtus with a deformed headⁱ.

In the month of June 1752, a woman at Eimbec was delivered of a Fœtus, which lived about four days. Mr. LIER, a surgeon there, dissected it in the presence of Drs. MEYEMBERG and BIELK, and made a sketelon of the bones, which he presented to the Royal Academy of Sciences.

The eyes were placed irregularly, the left being higher than the right, and likewise smaller, instead of the left ear, in the part where it is naturally situated, there was a Caruncle resembling a wart, and on the same side neither the cavity of the Tympanum, the small bones, nor the Labyrinth were to be found. The nostrils were wide spread, without any Septum, the upper lip was wanting, and that part of the upper jaw which is covered by the lip. From the skin on the right side of the face, there was an open canal leading to the nostrils. But there was no palate to be

ⁱ Progr. ad disp. clar. WALSDORFII. 1753.

found in this Fœtus, but instead of it the bare palate bone projected out of the mouth to the length of a whole inch ; to the forepart of which adhered a bifid fleshy, or rather cartilaginous substance, the right portion of it round, and the left oblong, expanded towards the eye and nose, about two inches long, and somewhat resembling a proboscis.

There was not the least appearance of an Uvula to be discovered. The Masseter and Buccinator muscles coalesced together in an extraordinary manner. The Septum narium was likewise wanting. To the middle articulation of the little finger of each hand, there hung loose another finger resembling it, suspended by a ligament. Instead of the penis there was kind of wart, and the surgeons could not discover any Urethra with their probes.

Though the Fœtus was born alive, yet the persons who dissected it say, that the lungs were remarkably small. The gall-bladder was not only much larger than common, but its figure was præternatural, resembling that of a horse-shoe, and besides was as hard as a stone. The kidneys were
also

also of an enormous bigness, being two inches and a half long, and two inches broad ; and, together with the liver, filled the whole abdomen.

From the figures which the surgeon annexed to the skeleton, it appears that the Fœtus had what is called a leonine lip.

Upon examining the skeleton more accurately, I discovered the bone of the upper jaw and of the palate, but the two portions of each were at the distance of an inch from one another; and besides, the jaw bone was shorter than usual, terminating at the socket of the third Dens molaris, before which there was neither gum nor alveolar processes, nor any room for the incisor-teeth to be discovered, but the nasal process of the jaw bone ascended straight in an oblique manner to the bones of the nose, at the sides of the maxillary bones, which formed the palate. The inferior *Ossa turbinata* were quite bare.

But the most monstrous appearance in this Fœtus, was the bone resembling a proboscis, arising from the cuneiform process of the *Os occipitis*, and projecting an inch beyond the lips. As it was dry when I examined

amined it, I could not sufficiently distinguish its bony structure, but it seemed to be of that kind. In its figure, though otherwise near a parallelogram, it resembled a thick Prism, or rib, and towards the extremity there was a broad eminence between two oblique depressions, in a hollow on each side of which were articulated the roots of the bifid Proboscis above mentioned.

That this Proboscis was preternaturally formed in the first stamen of the Fœtus, appears from hence, that there is no bone resembling it in the human body, which could have degenerated into it, for it arose from the Os occipitis, was very long, projected out of the mouth, below where the maxillary bones were divided from each other, and would have been at some distance from them, if they had even kept their natural situation. I do not deny that the division of the palate bones might have been owing to some violence, as in the Fœtus they are only united by a tender membrane.

The other parts of the skeleton were in a natural state, nor was there any thing
super-

superfluous to be observed in the bones of the fingers; so that these pendulous excrescencies of the little fingers, I attribute entirely to gelatinous appendages of the skin.

In the month of December 1747, I saw another hare-lip, but less deformed than the above, in a girl who died soon after she was born; in which case likewise the uvula was split in two, which frequently enough happens; and besides, the palate bone being perforated with a large oval hole, there was but one common cavity of the mouth and nose.

OBSERVATION LVI.

A lamb with only one eye.

The face of this animal had a very peculiar appearance; for, instead of a nose, there was a large protuberant eye, the cornea of which was remarkably broad transversely. It had an upper eye-lid, which seemed to be composed of two half ones, with their Ductus Meibomiani. The lower eye-lid was wanting, and the Tunica Conjunctiva was continued into the skin of the face.

On each side of the eye there stuck out an ear with a very small Meatus; and betwixt the two ears there was a deformed kind of mouth, scarce ten lines broad. The sides of the mouth were covered with two prominent cutaneous Papillæ, but below there was a kind of protuberant lip. The Fons pulsatilis was very small, and the frontal bone, without any sagittal suture, had the Dura mater very firmly adhering to it. There was only one optic nerve, and the muscles were also single, viz. the Levator of the upper eye-lid, the rectus superior, the obliquus inferior, the rectus internus, the rectus externus, the rectus inferior, and the trochlearis. In short every part belonging to the eye was single, and there was nothing remarkable neither in the Tunica sclerotica, choroides, or Retina, in the vitreous humour, or crystalline, excepting that they were all larger than usual. Does it seem as if this eye was composed of two? Could the Retina, the Vitreus humor, and all the muscles of the eye be composed of duplicates, and so their bulk be increased, without any change of their figure? This conjecture appears to me to be quite void of any foundation.

But

But in the rest of the head there appeared a remarkable enough deformity. The lower jaw, besides being ill-shaped, was not articulated with the temporal bone, as usual. The Oesophagus terminated at the Os hyoides in a blind bag, to which was annexed a very short tongue, hollow within, and into the Pharynx; so that this last could be inflated by blowing into the Oesophagus, within which there was a well-formed Larynx with its cartilages. Instead of the Tympanum there was a cavity filled with fat, without any of the small bones of the ears, and between the two Tympana there was a preternatural bone, reaching to each Os temporum. The mouth of the Pharynx, which seemed to be wanting, I discovered at last behind the tongue, between the two cartilages of the Os occipitis. The transverse muscle of the Pharynx, proper to this monstrous animal, constricted this orifice in the manner of a sphincter, taking its origin on each side of the styloform process. The orifice of the Eustachian tube was in its proper place above the Oesophagus, but there was no appearance of any nostrils. This monster

I dissected at Bern, in the month of September 1753, being sent me by my ingenious friend Mr. ALTMAN, who had it from the village of Aventyk.

IN the same month of September, as well as I can recollect, of the preceding year, I had a double egg sent me. The external shell was connected with the soft little egg which was inclosed in it, by a great deal of a fibrous cellular substance. This little egg consisted of an elastic membrane, which swam in water, and contracted in spirit of wine, and within it was nothing but a series of foetid whites, without either Sacculus colliquamenti or yolk. It weighed almost an ounce.

OBSERVATION LVII.

A Chicken with three legs.

In the class of monsters I may reckon a chicken about six weeks old, no bigger than one just hatched, which had a supernumerary leg hanging down from its rump. Upon examining it narrowly I discovered two rumps, or anuses ; but the Intestinum rectum was single and very large. This super-

supernumerary leg consisted first of a small triangular bone, not unlike a very small *Os innominatum*, suspended by a ligament, which was inserted into the two rumps; and to this was joined a long small bone analogous to the thigh, to the extremity of which two toes were articulated. Wherefore this extraordinary leg was not connected with the skeleton of the chick; and it would be very rash to suppose, that this was the only remains of another Fœtus, the anus of it being inserted into the intestine of the living one; and that this little leg, so different from the natural ones remained, while other parts much more hard and firm were annihilated, such as the bones of the head and breast.

OBSERVATION LVIII.

A deformed lamb, without a mouth^m.

I hope it will not be reckoned an useless task, to revive here the history of a monstrous lamb, which Dr. MULLER of Vinar formerly dissected and described, the

^m Progr. ad disp. clar. WARSDORFII, 1753.

drawings

drawings of which, done in 1733, I have now by me. In this lamb the lower jaw was entirely wanting. The right temporal and masseter muscles coalesced with the left; and by these alone the cavity of the mouth was formed. Instead of the tongue and Os Hyoides, there was only a caruncle no broader than a straw, and half an inch long, which adhered to the bones of the palate, and sent fleshy fibres to be inserted into the Os occipitis. The orifice of the Pharynx, produced from the Vomer and the Apophyse of the Os occipitis stretching to the Sella Equina, and likewise from the Os Hyoides, discovered no communication with the mouth. In that bag was placed the Larynx, as it usually is in the Pharynx.

This Fœtus could not receive the least nourishment by the mouth; and therefore in this sense it may be classed with those Fœtuses wanting that part which those authors usually mention who deny that the Fœtus is nourished by the mouth. Besides this likewise proves, that in Fœtuses there is sometimes such a deviation from the natural structure of these parts, as cannot be imputed

imputed to chance. For it easily appears, that the same violence which destroyed the tongue and lower jaw, must likewise have destroyed the muscles inserted into them, and not suffered their united extremities to form that cavity, which was there instead of a mouth.

OBSERVATION LIX.

A Coalition of the Kidniesⁿ.

Several years ago I happened to see a kidney, the only one in the subject, half double, and laying upon the aorta, where it divides into the Iliacs. Twice this same year I have had an opportunity of observing a preternatural structure in the same viscus, a description of which I imagine may be both agreeable and useful.

The first instance I shall mention was only a double kidney, and before any incision was made, it appeared to have a double Pelvis, on which account I cut it very carefully through the middle.

ⁿ Progr. ad disp. clar. à BRUNE. 1753.

° This is represented in Fig. IX. of a small essay *De fetu duplici ad pectora connato*.

There were two sinuses, one superior and the other inferior, separated by a double, thick, yellow, cortical flesh, so that they appeared to be two kidneys glewed together. In one of the segments of the lower portion of the kidney, there was a large reniform Papillæ, in the outer circumference of which a small part of the papillary flesh was wanting. Then there appeared two other Papilla, oblong in its transverse section. In the opposite segment, there was a fourth reniform Papilla, resembling the first; and then another superior, large one, broad in its transverse section, in which the urinary ducts descending from the cortical flesh, evidently put on the papillary texture. The fifth Papilla was situated in the middle, but rather nearer the external circumference, and was small and single. An infundibulum with a small orifice went through the apex alone of that Papilla, while its membrane, as it always does, arose from the basis of the Papilla, where it joins with the cortical substance.

Farther, above the Septum, or in the upper kidney, as it might be called, there was another sinus, in the side which I first mentioned,

mentioned, and a sixth and seventh oblong Papilla, as also four more in the opposite segment, two of which were placed nearer the internal surface; and the other two, which were conical, nearer the external. The twelfth, which was the lowest and least, had the most external situation.

Lastly, I examined the cortical Septa. In one half of the kidney the cortical columnæ stretched from the internal circumference towards the centre. In the lower part one forked column separated the first Papilla from the second, and the second from the third, and the twelfth it intercepted between its forks. In the opposite segment the first forked column surrounded the fifth Papilla with its forks. In one half of the upper segment there were four Columnæ, and in the other only one, large, and split into three forks, which surrounded the tenth and eleventh Papilla.

Each Papilla was evidently a perfect kidney, every where surrounded with a cortical substance; from the convex internal part of which the Papilla arose. The Columnæ separating the Papillæ appeared quite cortical and grumous, but not perfectly glandular.

In the body of a female child, which I dissected at Gottingen, I found only one kidney, of a more complex structure than the former, found, and at a considerable distance from the Capsulæ renales^p, which were in their natural situation, but of an oval figure; whereas in the human subject they are almost constantly of a triangular shape. The situation of this single kidney was tranverse, and its figure irregular, the left extremity terminating in a point, whereas the right was more obtuse. In it there were six tubercles, distinguished by their proper fissures, and two Ureters, going out from its anterior surface.

Its vessels were very numerous. The first was a large artery going from the Aorta lower than usual, under the inferior mesenteric. The second arising from the common trunk of the Iliacs, went to the left side of the kidney. The third arose from the right Hypogastric artery, and was bestowed upon the right side of the kidney. The branches of these arteries

^p Most anatomists besides EUSTACHIUS have given figures of this kind, of the Capsulæ removed at some distance from the kidneys, drawn after some particular animal.

were scattered upon the anterior surface of the kidney, as is usual in cats and other animals of the leonine species^a. The first mentioned artery was accompanied by a large vein from the Vena cava, which branched out on the anterior surface of the kidney. It is delineated in fig. I. as it naturally appeared.

Upon dissecting this ill-formed mass, it seemed to me very probable, that it was composed of two kidneys confusedly incorporated into one; so that the left, which was the smallest, being turned a little towards the right, had an oblique situation, its upper extremity being placed more to the right, and its lower to the left. It was composed of the tubercles S. T. Z. The right kidney was larger, and more removed than the other from its natural position, being placed almost quite transverse, its upper extremity being rather to the right, than superior, and its lower rather to the left, than inferior. To it belong the tubercles R. V. X. Y. This large kidney em-

^a Dr. RUTTY has given such figures in his treatise on the urinary ways. For in this a cat does not differ from a tyger or a lynx.

braced the other almost as easily as one of its largest Papillæ.

In the larger kidney there was only one Pelvis, and the Papillæ conical as usual, together with their ducts, which I found here, as I have frequently elsewhere, full of a yellowish pappy matter, the rudiments of a future stone, very much resembling that yellowish pulpy substance, which I have frequently met with between the coats of the arteries, and hardens into skinny, cartilaginous, and at last bony scales. Those Papillæ were deficient in their number, being only six. C. D. E. F. G. H.

The smaller and more imperfect kidney had only two Papillæ, the largest of which K. was split into three, and possessed the middle and largest portion of the kidney. The other was likewise large. L. L. more resembling the natural figure, of the form of the kidney, and its cortical part was received into the sinus of the larger kidney.

It seems very probable, at first sight, that this girl had originally two kidneys, which by some accident or other were grown
into

into one, by means of a preternatural cellular substance. But if we consider the vessels, upon which the nutrition of the parts most certainly depends, this opinion will lose a great deal of its probability. For it will appear that the aorta sent off only one renal artery, the two left arising not in the usual place, but a good deal lower, according to the structure of these parts observed by EUSTACHIUS, and almost by him only. Besides, these left renal arteries were not sent to the left kidney, as might have been expected if the left kidney had only been inclosed as it were in the right; for it is certain that these left renal arteries were chiefly sent to the right kidney D. E. as what seemed to be the right artery C. distributed its branches to the left kidney. But it is plain, that the right arteries could not by any accident be torn from the right kidney, and inserted into the other, and their innumerable branches extricated so dexterously from the substance of the one kidney, to take root in the interstices and membranes of the urinary ducts of the other, and at last terminate in its capillary veins. Besides,

there was only one large renal vein, and therefore it brought back the blood not only from the right, but likewise from the left kidney. But this it could never have done, if ever the left kidney was separate from the other. For the same observation may be repeated here, which was made concerning the arteries. Thus a superficial view would incline us to attribute this extraordinary make of the kidney to accident, whilst a more mature examination would make us rather imagine that it was preternaturally formed originally.

P L A T E III. *Explanation of the
Figures.*

F I G U R E I.

*An anterior view of the kidney of a girl a
year old, in its natural size.*

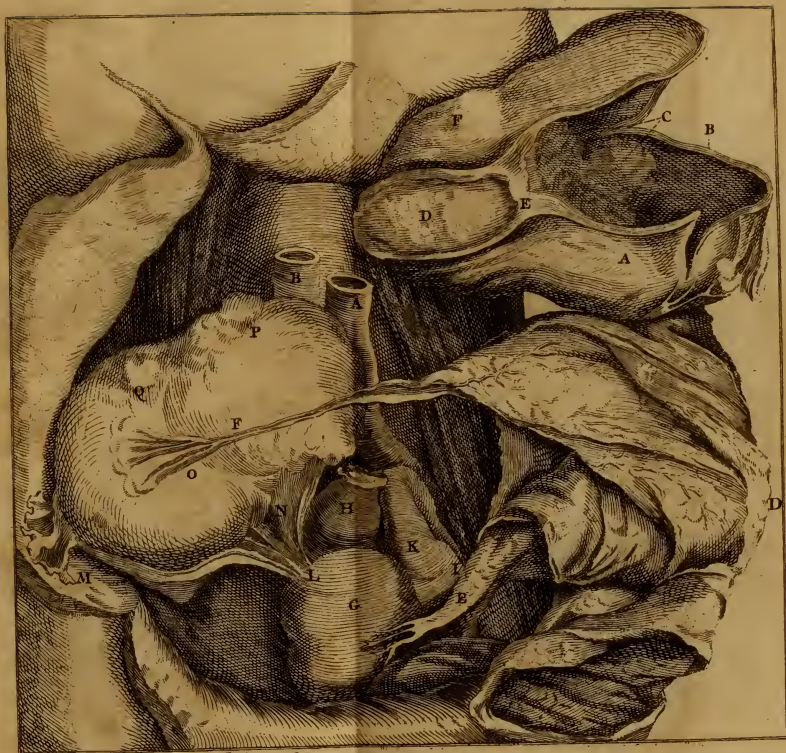
A. The Aorta.

B. The Vena cava.

C. The first renal artery.

D. The second, arising from the common
trunk of the Iliacs.

E. The



PATHOLOGICAL OBSERVATIONS. *Fig. 3^d Page 184.*

- E. The third, produced from the beginning of the hypogastric artery.
F. The right iliac artery.
G. The right hypogastric artery.
H. The renal vein.
R.S.T.U.X.Y.Z. The tubercles, of which the kidney is composed. U. and Z. make the same tubercle.

FIGURE II.

The kidney cut through the middle.

- AAA. The larger kidney laid open.
B. Its extremity.
C.D.E.F.G.H. Six Papillæ.
I. The smaller kidney.
K.K. Its larger Papilla.
L.L. Its smaller Papilla.

OBSERVATION LX.

A young lady with a double Vagina, and only one kidney.

A third kidney, which I come next to describe, was still more extraordinary than those abovementioned. It was taken from

the body of a young lady of family, whose name prudence forbids me to give the least hint of. She lived till the age of six and twenty, but had been long sickly, though not confined to her bed. Sometimes her menses were too copious, and sometimes quite obstructed; her urine was limpid, and she was very subject to hystERIC paroxysms, which put an end to her life. The surgeon who opened her body, separated the Uterus from the other viscera, only that it might be the more entire, he took along with it the kidney and the vessels belonging to both, which parts, when afterwards examined, turned out a remarkable example of a preternatural structure.

There was only one kidney, situated in the right side, the other viscera, especially the intestines, lying in the left. Its figure was almost round, so that you would not have taken it for a kidney, but for a kind of encysted tumour, inclosed in a proper bag; for a strong membrane, resembling the Peritoneum, made up half the mass, which had been the kidney. Within this membrane, which was the Pelvis of the
kidney,

kidney, distended beyond measure, there was contained to the quantity of two pounds of urine. The remaining part of the bag was the kidney itself, more like a Scirrhus than the real Viscus, composed of a pale coloured flesh, in which we could neither separate the cortical part, nor the Papillæ, nor even number these last. Upon opening the Pelvis it appeared that this confused mass of flesh, which composed the body of the kidney, was continued into it, as into a kind of recess. There was no cause appeared why the urine was retained, but the stagnating water seemed to have gradually distended the Papillæ to such a degree, that the cortex of the kidney by compression disappeared. Neither did this great dilatation discover any glands; wherefore in this respect we were not so fortunate as Mr. LITTRE.

As instead of two kidneys this lady had only one, so instead of one Uterus and Vagina, she had two of each, viz. there was a right and a left Uterus, both entire, and of an oval figure, but there was only one Ovarium belonging to each, as also one spermatic cord, with a cervix and valves

valves disposed into branches, all in the natural way ; so that even M. NABOTH'S vesicles were not wanting, and they had their usual structure, being round, close shut, without any orifice, and inclosed in a proper firm membrane ; which refutes the opinion of WEITBRECHT, otherwise a cautious man, who denies the existence of any such vesicles.

Each Uterus had its corresponding Vagina, the anterior being continued to the right Uterus, and the posterior, a little below the mouth of the right Uterus, opening into the left by a small orifice not above a line broad. These two Vaginæ were parallel to each other. I am sorry I had not an opportunity of examining the Hymens ; for as the surgeon cut out the parts privately, he durst not venture to carry off with him a part so suspicious in a noble virgin ; wherefore he cut off the Vagina almost half way from the Vulva. But there can be no doubt, that a woman so formed might be liable to one conception upon the back of another, and therefore that a perfect superfetation could take place in such a person, not to mention more idle con-

conjectures which might be started on such a subject.

OBSERVATION LXI.

A Vulva to appearance preternaturally formed.

I once saw a very strange appearance of a Vulva, which upon a more strict examination was of a very simple structure, viz. the cutaneous Labia, rising like two ridges, were stretched forth in such a manner as besides the true Vulva to contain likewise the Anus, and terminated a little above it. At the same time the Nymphæ, which were very large, measured one half of the length of the Vulva, and between them and the Labia was the Fossa navicularis larger than usual. But the Furcula, the Hymen, the proper orifice of the Vulva, and the other parts belonging to it did not at all deviate from their common structure.

OBSERVATION LXII.

Some remarks on persons who have been drowned.

Since BECKER, in a book which he published upon that subject, refuted the common opinion concerning the cause of death by drowning, it has been commonly allowed, that persons who are drowned, suffer the same kind of death with those who are strangled. And the usual way of arguing upon this subject has been thus. As the will resists the admission of water into the wind-pipe, knowing very well the intolerable pain which must thereby be occasioned, it shuts the orifice of the Glottis so forcibly against the water, that neither the force of this, nor of the incumbent atmosphere can overcome it. Thus the lungs being shut, the person dies in expiration; since for fear of the water getting in he dares not venture to inspire. But in expiration the blood cannot pass from the right ventricle of the heart into the lungs; which at that time are collapsed and constricted; and hence the veins of the whole
body

body become turgid, especially those of the brain, and swell in such a manner as to imitate the pulse of the arteries^r, and at last that the blood being collected in the right auricle and ventricle, the left ventricle remains empty, whereby the supply of blood to the brain is intercepted, in consequence of which the person dies.

But it was very justly asked, whether there was any other cause of death in this case? whether the water by its force and weight might not rush into the lungs, fill them, and exclude the air, and occasion death almost in the same manner as a collection of water in the lungs from a disease sometimes does? For this was an older opinion, and more commonly received, in consequence of which it has been customary to suspend persons who have been drowned with their head downwards, in order to drain off the water, and thereby if possible to recover them. But BECKER refuted this opinion to the satisfaction of most physicians, and I could not help joining with them.

However, in the summer 1748, a woman who was drowned by accidentally fall-

^r Comment. Goeting. tom. II. p. 128.

ing into the river Leine, and had remained several hours under water, was brought to me to be dissected, and together with my ingenious colleague Dr. CHRISTOPHER HOFMANN, I had an opportunity of confirming what he had discovered by experiments. Viz. all the parts of the lungs and breast remaining entire, upon pressing the lungs, the water which had made its way into them, evidently regurgitated by the wind-pipe. So likewise, upon pressing the stomach, the water which the woman had swallowed, returned by the gullet. The lungs were entirely black, and the heart void of blood.

But we ought not to conclude, from this instance, that BECKER's hypothesis is not founded on truth. For a very probable cause may be alleged for it, and both observations, i. e. of the water being found, or not, in the lungs, may be reconciled thus. If, for example, the body should be opened immediately, or very soon after the person was drowned, there might perhaps be no water found in the bowels, the abovementioned constriction of the Glottis excluding it. But if it is not opened till
several

several hours, or perhaps days after death, the tone of the muscles in that time being relaxed, the Larynx and Glottis will both be opened, and the water, especially if the person was drowned where it is deep, will by its proper weight gradually make its way through the relaxed passages into the lungs and stomach.

I cannot help mentioning a phenomenon not very common that appeared in this body, viz. the lacteal vessels both in the intestines and mesentery were quite turgid with chyle, full of valvular knots, and seven or eight of the larger sort formed a kind of Plexus in the centre of the Mesentery. At the same time the thoracic duct was filled with lymph, instead of chyle, as in the human body for the most part it is found full of a pellucid fluid. But the distribution of the lacteal vessels both in this woman, and in most animals which I have dissected, was by no means such as I have hitherto seen represented in figures of them. Nor indeed did they seem to follow any other course than that of the blood-vessels, forming arches, as these vessels do, with the neighbouring little
O trunks,

trunks, parallel with the intestines, and convex towards them.

But to return to my subject, as it appears that in persons who have been drowned the water has made its way both into the lungs and stomach, I thought it worth while to try if I could discover by experiments, whether this is always the case, and what hopes there might be of recovering persons drowned, some of whom are said to have been brought back to life after lying a very considerable time under water. Wherefore in the beginning of the year 1753, I tried this experiment upon dogs and other animals. Two dogs died within twenty-five minutes, so as not to be recovered by all the arts that could be used. There was water found both in the stomach and lungs, and by compression it run out by the wind-pipe, mixed with a great deal of froth. There was no difference found in the blood of the two great veins, viz. the Cava and pulmonary; the lungs were red indeed, but swam in water. After this a cat was plunged suddenly into water, and died irrecoverably in the space of two minutes. In the stomach there was no

water, but it had got into the lungs, and run out foaming, mixed with the air of the Trachea. In another dog which was irrecoverably drowned, there was a great quantity of water both in the stomach and lungs; and in this case also, (which I repeat on purpose), in the cava and pulmonary vein there was a deal of thick black blood, differing nothing in either as to colour or tenacity. In a fourth dog, who was taken out, after remaining seven minutes under water, and was quite dead, there was a quantity of water found in the stomach, and likewise in the Trachea and lungs, mixed with froth; the vessels belonging to the right auricle and ventricle were full of blood, and those belonging to the left empty. From other experiments it appeared, that the Glottis in animals that have been drowned remains open; that the water found in them has been swallowed voluntarily, nor does it make its way into the lungs of the dead body by its gravity; for in those animals that are plunged into water after they are dead, there is no water found neither in the stomach nor lungs. In all the experiments

ments which the ingenious Dr. EVERS published in his thesis at Gottingen in 1753, the event was almost the same with the abovementioned.

From these experiments may be drawn several very useful corollaries. And first, the cause of death in animals that are drowned, seems to be chiefly the water drawn into the lungs, and by the last strugglings of the animal conquassated into foam with the air contained in the Trachea and lungs; which foam cannot be expanded by any dilatation of the Thorax, seeing it is not capable of expansion like elastic air. For thence the veins and arteries seem to depart from that straight direction, which follows upon the distension of the vesicles, and is necessary for transmitting the blood sent from the right ventricle to the lungs. Neither does it appear that these vesicles can swell to a true spherical figure, without expansive and elastic air. Secondly, these experiments leave little hopes of recovering persons who have been drowned, seeing the obstructing froth cannot be expelled from the Aspera arteria and lungs by any method hitherto discovered;

discovered ; and the event of them all shews us, that animals the most tenacious of life die suddenly and irrecoverably upon being drowned. But if you desire me to explain, or refute those stories which have been told of persons who have remained under water for hours, or even days, and afterwards have recovered, the only conjecture I can offer is this, that possibly during those intervals when they were above water they drew in some air ; for our bodies being very little heavier than water, those unfortunate persons commonly raise their heads several times above it before their final submerision.

F I N I S.

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